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Universities and the People's Health

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These are days in which the objectives and ideals of every institution of a democracy are being weighed in terms of its practical contributions to the welfare of the people. There are few to deny that universities are among the most essential of American institutions. As professional people we have a keen sense of obligation for the contributions which professional colleges make to the health of the nation. We take pride in the fact that we are keeping our house in order for any trial which may lie ahead.

An urgent problem of the present emergency which the professions of the health sciences are facing with government is the need for programs which will strengthen to the utmost the physical, mental and moral fiber of the people. Fully adequate dietaries and healthy living conditions for everyone are basic essentials in any total defense program. This calls for active cooperation in the planning and the functioning of many professions and organizations. It is natural for the people and the government to look to the professions and the universities for leadership.

The twentieth century is witnessing remarkable progress in the development of medical science and professional education. This progress is as much attributable to the interest and activity of professional societies as to the universities themselves. Without the establishment of high standards, and constructive criticism from the organized professions serving the health needs of the people, and from others, it would have been impossible for voluntary and governmental agencies to mobilize the necessary financial support with which to build the medical establishment of universities. Proud as we are of this achievement, it is refreshing to realize that it is only a beginning, for in many areas problems have only recently been identified and possible solutions are only now appearing. If in the years ahead further outlets for the dynamic energies of the people are fostered by the government, we can confidently expect even greater contributions to the well-being of the people from the professions and the universities. The outstanding fact to be learned from past progress is that voluntary cooperation and coordination of effort are the primary essentials for success of democratic endeavors.

University medical establishments have largely assumed the responsibility for

the fundamental education and training of the health personnel of the country. Colleges of medicine, dentistry, pharmacy and veterinary medicine and schools of public health have developed as integral parts of university systems. These colleges have, to a very large degree, developed independently with varying degrees of coordination among them. The increasing interdependence of these disciplines is generally recognized, and steps are being taken to implement the need for more active cooperation and coordination of effort.

Dentistry recognizes, for example, that to meet its full responsibility it must be more strongly based in the same biological and medical sciences underlying other specialties of medicine. Dentistry is not satisfied with the great achievements of its techniques and skills but is moving on in closer collaboration with medicine to unsolved problems of growth and development, the prevention of dental disease, and a wider distribution of dental service.

Pharmacy, although developing under university auspices, has lacked adequate contacts with other medical science disciplines. The result is that it has not fulfilled the promise that the leaders in this field have visualized. The importance of biological therapeutic agents in the treatment of disease has been greatly extended in recent years, and yet students of pharmacy receive inadequate instruction in such fundamental medical sciences as physiology, pharmacology, toxicology, and physiological chemistry on the mistaken theory that too much knowledge of these subjects would be dangerous for the practicing pharmacist—mistaken because it is only through knowledge that the student and the practitioner develop a sense of responsibility and caution in dealing with the public at the drug store counter. The rapid development of knowledge of the chemistry, manufacturing, and marketing of vitamins places the pharmacist in the position of handling products about which he has very little fundamental understanding. This by any estimate is not in the public interest. The same can be said of hormones, vaccines, and sera, but in these instances the physician and public health agencies exercise greater control.

The medical profession is indebted to veterinary science for many valuable contributions to our knowledge and control of certain diseases in man. The public recognizes the veterinarian for his skill in the care of domesticated animals and fowls. The great industries having to do with the preparation of meat and meat products for marketing and the government meat inspection service are dependent upon veterinary and medical sciences for qualified scientific personnel. Further extension of cooperation between veterinary and medical sciences through the professional societies and schools is desirable.

Cooperation between the medical and nursing professions has always been cordial. The nursing profession and schools of nursing have looked to the medical profession and to medical schools for teaching in the fundamental medical sciences. A number of universities have raised the standards in nursing education to the full collegiate and graduate levels in order to provide an educated, competent personnel for teaching and administrative responsibilities for hospitals and public health services.

The extension of university affiliations with hospitals and cooperative educational programs among accrediting agencies and professional and hospital associations is resulting in the further elevation of standards and the consequent improvement in the quality of service to the patients. It is in the hospital and outpatient department that all the branches of professional service articulate in a coordinated program of service to the patient. Here the physician, surgeon, dentist, nurse, pharmacist, social service worker, and technicians of all kinds work harmoniously in a unified effort with the single objective of meeting the needs of the patient. Nowhere in American life is there a more inspiring example of the public benefits which flow from effective coordination of specialized services.

The university's primary responsibility in the health program of the country is to provide an educated and trained personnel possessing the necessary qualities of personality and character to meet fully the responsibilities of the professions they serve. This means that universities and licensing boards share the responsibility for the selection of persons possessing the essential intellectual and personal qualifications. Universities, therefore, must be concerned to keep the channels open for all qualified students, and especially for gifted, superior students, from secondary schools to undertake higher education in colleges and professional and graduate schools. There is evidence that in making a choice for a life work many promising students fail to be attracted to professional fields because of insufficient financial means for a lengthy education and of inadequate information concerning the requirements, opportunities, responsibilities and promise for satisfying careers. Many students of outstanding ability do not receive the advantages of university experience for reasons beyond their control. This represents a great loss in talent which the nation can ill afford these days. The expanding opportunities for intellectual improvement, advancement, and professional standing in the several health professions should be made more widely known to youth, and superior students from families with small incomes should be supported by adequate scholarships.

Numerous smaller professional groups serve the health needs of the people in various ways. Among these optometry has received recognition by a number of universities. Some optometrists practice their specialty on a high professional and ethical plane, and some physicians and ophthalmologists collaborate with them. Since this profession is recognized by statute and has licensing bodies in all the states, more attention must be given to the educational standards. This need is fully recognized by the profession itself.

Various interprofessional councils and societies are approaching on common ground the many unsolved problems of articulation between their respective areas of service. Notable progress in this direction has been made in several states.

The physician, psychiatrist, psychologist, sociologist, and others have focused attention on environmental factors leading to a breakdown in the health of the individual. Today there is widespread realization of the importance of the

industrial and social environment to the health of the people. The contributions of medicine and engineering to industrial health through scientific control of industrial hazards of all kinds are examples of the far reaching effects of collaboration between management, labor, engineering, medicine, and government in improving working conditions of the people.

If we are to believe the daily headlines, and there is convincing evidence to back them up, we must realize that a breakdown in the normal relationships of people and nations threatens the future of western civilization. War is a "death rattle" caused by disease of the interrelationships among men and nations. It is a devastating explosion compounded of unsolved national and international problems and egocentric leaders with the lustful instincts of gangsters. In such situations anything can happen and usually does. No one looking at the European scene today will deny that there is a direct relationship between the health of the people and socio-economic maladjustment. Casualty lists are adequate evidence.

Universities as centers of inquiry into the underlying causes and forces which shape the civilization of the day, share with the government the high responsibility of research and study to better understand the breakdowns in the processes of civilized intercourse between peoples and nations. It is not the function of the university to enter the political arena to seek solutions for specific problems. One of its functions, however, is to serve the people by providing them and their government with reliable information which can be used in shaping public policy and law. State universities above all others, because of their direct financial support by the people, must rise to this responsibility or deteriorate to the level of vocational and technical schools. Universities not supported by tax funds share this responsibility, for these universities are also dependent upon the people for financial security. (Essentially, therefore, no real distinction can be made between the functions of state supported and privately endowed universities.) There is evidence that universities are developing to a level of service to the people which may well become the strongest fortress of democracy. Unless they fully achieve their larger social functions in the commonwealth it is not unlikely that our universities will acquire the anemic complexion of educational institutions (so-called) of authoritarian states.

It is not enough to say, therefore, that universities will have fully realized their mission if they seek only the solution to material problems and provide only the professional and technical personnel to meet the immediate needs of society. Casual study of world conditions should convince anyone that the roots of military conflict go much deeper than the purely technical and social problems of society. Careful studies suggest that social and economic disease is a reflection of immaturity of moral and spiritual development of some of the people. Universities share responsibility with education generally for having provided opportunities for education which over emphasize materialistic conceptions of the problems of the people. It is to the glory of medical science that it has never lost sight of the human qualities in all problems, medical and otherwise. Humanism

depends on factors as yet beyond the reach of the scientific method. In the practice of a profession the art of the profession consists in the application of the methods of science to a human situation. Great as has been the scientific progress of this century, medicine has never forsaken its faith in the quality and dignity of the human spirit. Perhaps a future contribution of universities may be that they will enlarge this concept to wider fields of usefulness in the solution of economic and social problems.

Universities can best contribute to the people's health by providing higher educational opportunities for well qualified and gifted students who can meet the requirements and responsibilities of higher citizenship and of enlightened, unselfish leadership. This requires more than the mere acquisition of knowledge. Universities must continue to be the principle seat of inspiration by their example of inspiring thinking, investigation, and teaching which give full recognition to the importance of moral and spiritual values. Unless youth is challenged by the human qualities of problems we have failed to solve and can find inspiration and guidance in the teachings and in the community of the university the influence of the university of the future will be as materialistic as it has been in the past. Youth is seeking something beyond itself in which to have secure faith. Universities must help them find it.

Pagan dictatorships have destroyed some of the world's greatest liberal universities. The universities of our democracy are still free to seek a higher future. Today's great challenge to them and to all education is to inspire the confidence of youth in the high objectives of education and inquiry which in a democracy seek truth, human justice, and moral and spiritual values. Unless this callenge is accepted our freedoms are insecure. Universities, democracy and religion will stand or fall together. And if they fall the light of liberal learning of our time will be "blacked out" and another dark age will have begun.

Qualities Which a Medical Student and Physician Should Have or Develop*

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Everyone has heard of the "born doctor," but few have ever known one. Most of the qualities usually attributed to this mythical physician are not congenital but were developed by conscious or unconscious effort. At the risk of being considered the proverbial fool who rushes in where angels or even Dale Carnegie fear to tread, the following list of these virtues is presented: Honesty, intelligence, memory, accuracy, application, intellectual curiosity, charity, faith, humility, hope and patience.

Honesty and character are the greatest of the medical virtues. Financial honesty is not unusual; the law takes care of that, but intellectual honesty, the courage to say that one does not know something, to admit that some tests are inconclusive or have not been done, that more data are needed, that the diagnosis or treatment may be wrong, or that another physician may be equally or more intelligent and therefore desirable as a consultant—that is the phase of honesty which needs cultivation in medicine. Bluffing is a form of intellectual dishonesty; it is futile and almost invariably results in "loss of face" among associates when caught. Most students soon learn by sad experience not only that it is more honest to avoid bluffing, but that it is much the safest policy.

Intelligence is essential. No amount of premedical preparation and medical education will compensate for the lack of it. It is almost impossible to make an unintelligent student into a good physician, but an intelligent one, regardless of the type of his training, usually becomes a good doctor. Psychological or intelligence tests, though not infallible, should be used to estimate the mental capacity of student applicants. Most students and physicians learn to realize their limitations and compensate for them by more study or by asking for help, but he who is not conscious of his own ignorance, or worse yet, he who does not realize that others recognize his stupidity, is anathema to the profession and a menace to patients. To paraphrase the Arabian proverb, "He who knows not, and knows that he knows not, is simple, but can be taught; but he who knows not, and knows not that he knows not, is a fool and should be shunned."

A good *memory* is required in the practice of medicine, which really consists in studying patients and their symptoms and then arriving at a diagnosis based on reading and the memory of previous cases. Failure to recall similar conditions may lead to errors. The art of arriving at a correct diagnosis is based on the meticulous collection of evidence from every available source, recalling the conditions which may account for the symptoms, and then carefully evaluating

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and synthesizing this material. Memory plays a large part in these three processes; though it is insufficient by itself, it helps.

My own memory has been helped in two ways, first, since my father was a minister, by my early church training in having to recognize and remember the faces and names of the parishioners, and second by my "black book." When very young, I scorned people who relied on notebooks, but I soon realized that the human head has a limited capacity and that any new idea crammed into it often makes room for itself by pushing out something else. If a physician's mind were sufficiently "encyclopedic" to remember all data without a reminder, the chances are that his brain would not be adequately analytical to utilize this material to the best advantage. Memory is treacherous, a mere reminder often makes a physician master of the situation. The "Robinson Reminder" pocket book was the solution for me. Everything that can be written goes into it to save brain space. I even go to bed every night with the little book under my pillow, for many ideas arise during sleep, and unless they are written down immediately on waking they generally are forgotten. The only difficulty is that my handwriting, which is difficult at the best of times, is almost illegible when half awake. Students who wish to be sure that their requests would be attended to always insist that I write them in my little book. Needless to say, one must not forget to consult his reminder book frequently!

Accuracy in observation and especially in reading and carrying out directions and labels should be practiced constantly. For many physicians, this accuracy is the only gain from their premedical and even their preclinical chemistry courses. Failure to calculate doses correctly may cost a patient his life, though I remember one unexpected cure which followed the administration of ten times the prescribed amount of mercurochrome to a moribund patient; the physician's decimal point was wrong, but the patient's infection apparently needed the huge dose. Such occurrences are rare.

Application, determination, concentration, devotion, responsibility, persistency, industry, thoroughness and other synonyms are essential to the job of learning medicine and to its practice later. Osler summarized these qualities—"The master-word of medicine is work." Mr. J. B. Duke in establishing the university bearing his name requested that "Great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination and application evincing a wholesome and real ambition for life." A relish for and a keen enjoyment in work comes easily if the student is interested in medicine and people.

Intellectual curiosity is a virtue which is almost universally present in the very young, but subsequently is usually exterminated during the long school and college years. If this curiosity survives, it may grow into healthy originality, imagination and ideas, which are all too rare in medicine. The profession, or at any rate many members of it, resembles the chapel preacher at Yale who prayed "Lord give us power, give us power, give us power," until President Hadley pulled the divine's coat tails and whispered, "Brother, it's not power you want,

it's ideas." The fortunate few who have ideas usually do nothing about them themselves, though they are very helpful if they pass them along for other less original workers to develop and carry out. The really exceptional physician who has ideas which he puts into effect, like Drs. Banting, Best, Minot, Whipple and Murphy, eventually gets a Nobel Prize. In addition to the scarcity of ideas, medical progress suffers still further through the inability or even unwillingness of many physicians to accept the new ideas of others. Many men balk at an idea unless it is their own or unless they think it is.

Every student and physician should attempt at least one research problem. The results may not set the world afire, but the individual will gain the mental satisfaction of knowing more than anyone else about a small point or two. He also will learn the difficulties and pitfalls of research, and develop critical judgment and a healthy scientific scepticism as an antidote to the therapeutic credulity so easily bred by pharmaceutical detail men. Students trained in this way, usually, though not always, realize that medicine is changing, and that in order to keep abreast of its progress they must be alert for new ideas. On the other hand, the graduates of medical schools in which research is discouraged, and there are several such, and in which the instruction is so thoroughly systematic and didactic that the students cannot conceive of even hearing of any additional information, generally are as sterile of new ideas, as a mule.

Medical progress is possible only if every idea, good, bad, indifferent and even apparently foolish, is tried and tested by animal experiments to make sure that it is not harmful and involves no risk to the patient. Sound ideas are soon accepted and the others rejected. This view might seem to demand an omniscient medical profession, but the rapid acceptance of sulfanilamide and its derivatives is proof that most medical men recognize excellence very quickly. The difficulty is to bring these good ideas out of hiding; a quarter of a century was required for some one to test the therapeutic effect of sulfanilamide.

Charity, the greatest of the biblical virtues, of course is necessary. Every physician and hospital does at least one third of his or its work for nothing, but in order for this charity to go to those who need it, patients should be investigated by social service or welfare departments. One aspect of charity which is greatly needed in medicine is charity towards one's fellow workers. As Osler admonished, "No sin will so easily beset you as uncharitableness toward your brother practitioner. So strong is the personal element in the practice of medicine, and so many are the wagging tongues in every parish, that evil speaking, lying and slandering find a shining mark in the lapses and mistakes which are inevitable in our work." Constant observance of Christ's sermon, "Whatsoever ye would that men should do to you, do ye even so to them," and of the maxim of Hillel, the Hebrew teacher, "What is hateful unto thee, do not unto others," will prevent all misunderstandings, medical and otherwise.

Faith in the integrity and sincerity of others, until proven otherwise, is a great asset in medicine. Too often mutual suspicion wrecks medical relationships. Tolerance of the other man's opinions, and an honest attempt to see his point of

view quite frequently correct one's opinions and make one less dogmatic. Too often medical consultations are attempts to defend the original diagnosis instead of a cooperative effort to locate the real trouble, especially if it means accepting another physician's, intern's or student's opinion. Discussions of any question should be friendly, and the argumentative and contentious individual can be quieted without rancor by the reply, "Possibly so," a method frequently used by one of my friends. As a matter of fact, bitter medical arguments are futile; either the correct answer can be found by further tests, or as is often the case, the question cannot be settled conclusively and the answer is only a matter of opinion.

Interns and students should be encouraged to present their views and should be complimented if they correctly disagree with the staff's views. To be proven wrong by one of the house staff or students is good training in *humility,* a virtue too often absent in the medical and other professions. The church treasurer prayed at my father's installation service, "O Lord, keep our new pastor humble, we shall keep him poor." Pride in always being right is dangerous for preachers and physicians, especially for the latter's patients. A physician should try to see himself as others see him. Humility and modesty are acquired characteristics, and, therefore, need constant attention.

Medicine and especially hospitals cannot survive without *hope* and *patience.* Whether it is the patient's diagnosis or treatment, research problems, writing papers or books, or the need for more equipment or a new building—hope, patience and equanimity are essential. Patients and their families resent being told that there is no hope, particularly if recovery ensues. The old adages that, "Where there is life there is hope," and "Rome was not built in a day," as well as the knowledge that today's worries generally are less the next morning always should be remembered. If they are, the size of the task and the time and effort required need not seem appalling and hopeless, and optimism and a cheerful disposition ensue. If, in addition, a physician has a sense of humor, the study and practice of medicine are pleasant for all concerned, especially the patients, for it is an unpardonable mistake not to radiate optimism.

SUMMARY

If a student or physician has the qualities described above or develops them, he will surely become the "true physician." If he will use these qualities in his medical training and in the care of his patients, his success in practice will be assured. The extent of his professional income, which unfortunately does not always parallel a physician's qualities, will be determined by his business ability, energy, personality, common sense, location, hospital and other affiliations, and his specialty, factors which are sufficiently obvious to need no discussion.[1]

1. Davison, W. C.: Opportunities in the Practice of Medicine. J.A.M.A. 115: 2227-2232 (Dec. 21), 1940.

Selection and Predicting Success in Medical Schools

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All professions wish to get the highest quality of student into their advanced schools whether these be schools of medicine, law or education. Professional schools ask the colleges to encourage the best men to enter and colleges attempt to meet this request in counseling students of low ability to change their professional plans. The interests of the professional schools and of the colleges converge and agree in that the former seek students of the greatest potentialities while the latter wish their students to be successful in whatever line of endeavor they undertake. Practice has shown that students of low ability will succeed better in nonprofessional vocations—a fact which is becoming increasingly true as medical students are more carefully selected. For both parties, prediction of success becomes important. The purpose of this paper is to study the amount of selection made by students going to medical school from one liberal arts college and to determine which factors have made for success of its graduates in medical school over a period of eight years.

THE DATA

The data of this study are made up of students of Colgate University during the years 1931-1938. Over this period approximately 139 students so seriously planned to go to medical school that they voluntarily took a medical aptitude test. Only 36 of this number did not attend medical school. Complete aptitude tests, intelligence tests, college marks, high school marks, etc., were available for 85 students. The remaining 18 who attended medical school were not included in the study because their records lacked one or more important variables.

Information about the 85 students used as data in this study includes:

1. Intelligence percentile—American Council on Education Psychological Examination
2. Aptitude percentile—Association of American Medical Colleges Aptitude Test
3. High School Record—average mark corrected for differences in schools
4. Quality Point Index—in department of concentration at Colgate University
5. Quality Point Index—out of the department of concentration at Colgate University

   (Both indexes are based on the calculation of A=3, B=2, C=1, D and F=0)

6. Major Department in College
7. Medical School Attended
8. Mark in Medical School—average number mark.

All students took the intelligence test at the same time; that is, on entrance to Colgate University. Aptitude tests were taken by 15 per cent of the students in their sophomore year, by 71 per cent in their junior year, and by 14 per cent in their senior year. Each student's high school record was an average of his high school marks corrected for differences in quality and difficulty of the school by the Colgate University Dean of Admissions. Medical school marks were obtained from the Registrars of the medical school and were equated on the assumption of a normal distribution of marks. This will be described later.

The above data are available for two groups: (1) those 85 students who went to medical school; (2) those 36 premedical students who did not go to medical school. At times data concerning all the students in the University will be employed.

HOW GREAT IS THE SELECTION?

The median intelligence of the 85 students going to medical school during the past eight years was 58 as compared to 50[1] for the college as a whole, and as

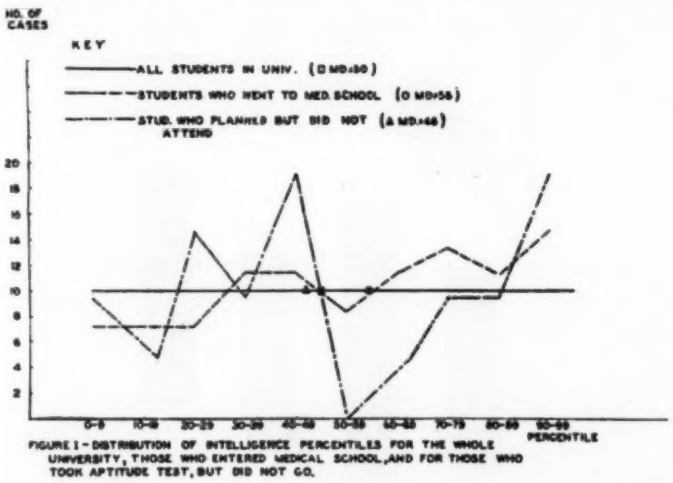

FIGURE I - DISTRIBUTION OF INTELLIGENCE PERCENTILES FOR THE WHOLE UNIVERSITY, THOSE WHO ENTERED MEDICAL SCHOOL, AND FOR THOSE WHO TOOK APTITUDE TEST, BUT DID NOT GO.

compared to 46 for those who seriously considered going to medical school but did not go. The difference of 8 percentiles between the first two figures is 2.6 times the standard error of 3.1. As shown in Figure I about 7 per cent of the students who went to medical school were in the lower decile in intelligence and 7 per cent were in the next to the last decile. If differences in intelligence above a given minimum are important for success in medical school, a more ideal graph would show no medical students in the lowest 5 deciles and 20 students out of

1. The median percentile of Colgate University has been defined as 50 in this study. Relative to all entering freshman taking the A.C.E. test, it is higher.

100 in each of the five highest deciles in Figure I. The difference of 12 percentiles between the two premedical groups is only 1.6 times the standard error of 7.4.

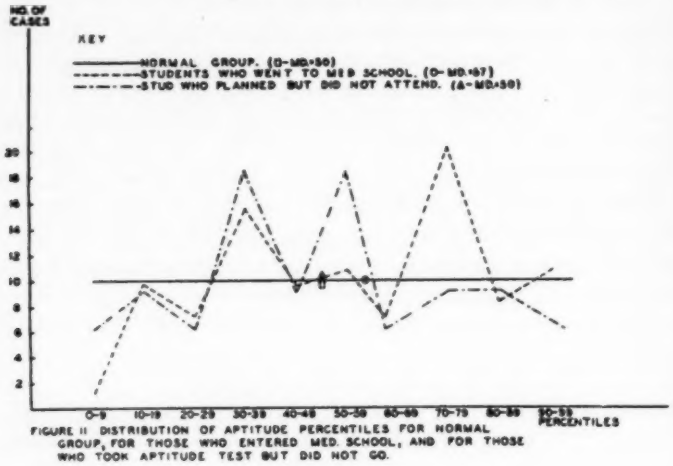

FIGURE II DISTRIBUTION OF APTITUDE PERCENTILES FOR NORMAL GROUP, FOR THOSE WHO ENTERED MED. SCHOOL, AND FOR THOSE WHO TOOK APTITUDE TEST BUT DID NOT GO.

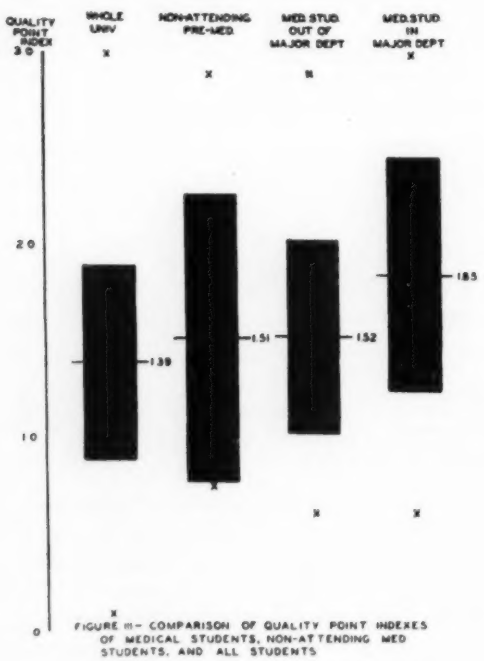

FIGURE III— COMPARISON OF QUALITY POINT INDEXES OF MEDICAL STUDENTS, NON-ATTENDING MED STUDENTS, AND ALL STUDENTS

All of the non-attending premedical students ideally would be distributed below the 50th percentile.

The median aptitude percentile of the 85 medical school students was 56 as compared to 50 for the non-attending premedical school students. Again, this difference is not as great as might be desired. Few students in the lowest decile enter medical school, according to Figure II. However, little selection has taken place in the second, third and fourth deciles. The difference of 6 percentiles is only 1.1 times the standard error of 5.3.

Figure III shows that the quality points of the men who attended medical school was 1.85 in their major department and 1.52 out of their major department. The total quality point index of these students, both in and out of their departments of concentration, which is more comparable to bars 1 and 2 in Figure III, was 1.60. It is .21 above the quality point index of the whole university, or 3.5 times the standard error of .06. It is only .09 above the average quality point index of the non-attending premedical students, a difference which is only .64 of the standard error of .13.

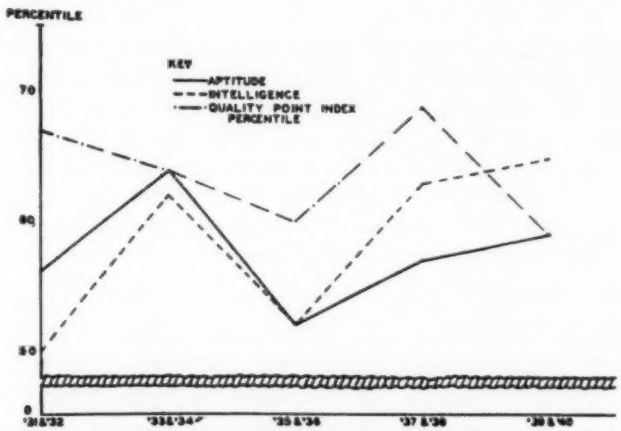

FIGURE IV—TREND IN APTITUDE, INTELLIGENCE, AND QUALITY POINT INDEX OF STUDENTS ENTERING MEDICAL SCHOOL FROM 1931–1940.

The three sets of data show that premedical students were only slightly superior to students in the whole university. However, premedical students were again selected before entering medical school so that the difference in ability between those going to medical school and students of the whole university tends to become statistically significant. That the difference is not educationally significant is due, partly, to the fact that students in the lower deciles of intelligence, aptitude and achievement have not been discouraged sufficiently either by the college or by the medical schools during the past eight years. Probably too many other things, such as father being a doctor or father being an alumnus, had influence.

During the past three or four years, however, the prestige of the medical profession is commonly believed to have risen sharply and counseling of prospective premedical students is thought to have improved. These hypotheses are

partly substantiated by the trends shown in Figure IV. The mean intelligence of medical students rose from about the 50th percentile in 1931 and 1932 to about the 65th percentile in 1939 and 1940. However, the aptitude test percentile was about 58 in 1931 and in 1932 and increased by but one point to 59 in 1939 and 1940. The increase of the intelligence percentile and lack of increase of the aptitude percentile possibly has a simple explanation. Medical students entering from all colleges probably might have had an average intelligence percentile of 65.

TABLE 1. THE RELATIVE IMPORTANCE OF FIVE VARIABLES IN PREDICTING SUCCESS IN MEDICAL SCHOOLS

Variable	Beta
Aptitude	+.104
Intelligence	—.032
Qual. Pts. in Dept.	+.223
Qual. Pts. out of Dept.	+.415
High School Achievement Record	—.078

The trend in average quality point index of Colgate University students going to medical school has not been consistent. For two groups, 1935-1936 and 1939-1940, the college achievement was low, for two others, 1931-1932 and 1937-1938, the quality point index was high. Hence, there seems to be no general trend of improvement in selection with respect to college achievement.

The tentative conclusion that must be drawn is that medical schools are selecting more on the basis of intelligence and aptitude tests than of college marks. That the latter is a better basis of predicting success is to be proved.

WHAT THINGS ARE IMPORTANT FOR SUCCESS IN MEDICAL SCHOOL?

The most important factor for success in medical school is the mark a student makes outside of his department of concentration in college. A student's general all-around college achievement counts more than does success in his department

TABLE 2. TABLE OF INTERCORRELATIONS BETWEEN (1) APTITUDE, (2) INTELLIGENCE, (3) QUALITY POINTS IN AND (4) OUT OF MAJOR DEPARTMENT, (5) HIGH SCHOOL RECORD, AND (6) MEDICAL SCHOOL MARKS

	1	2	3	4	5	6
1		.688	.366	.437	.638	.297
2			.458	.485	.560	.299
3				.687	.345	.504
4					.492	.560
5						.259

of concentration—usually one of the sciences. The beta (importance) obtained from a multiple correlation of aptitude, intelligence, quality points in the student's department of concentration, grade points out of the student's department of concentration, and high school achievement record shows that general achievement is almost twice as important as achievement in the department of concentration. Table 1 shows the relative importance of each of the variables.

Next most important is the average mark made in the college department of concentration. Evidently, different abilities are called for in these scientific departments than is the case in other departments, for the one does not cancel out the other in the multiple. The only other significant separate factor is aptitude.

The intercorrelations shown in Table 2 reveal some peculiarities which account for the lack of relationship of high school record and intelligence to success. High school record correlated very poorly with medical school success. Yet its lowness is not due to lack of reliability or presence of error in combining marks of different high schools, for it correlates .49 with college marks out of department, and .56 with intelligence and even .64 with aptitude. These high correlations indicate that it has little extra to contribute. Besides the fact that success in high school is not very highly related to success in medical school, it overlaps three other variables to a considerable extent.

Intelligence overlaps all the other four variables. This fact, combined with its low correlation with success in medical school, accounts for its negative weighting in the multiple. The two negative importances could be explained as follows: if two students achieved equally well in college (about average) but one received all A's in high school and had a high intelligence, while the other had a difficult time making B's with a slightly lower intelligence, it would be the latter student who would have learned the habits of concentration and application which would serve him well both in college and in medical school.

Further evidence that application and study habits are important for success in medical school is furnished by a correlation of studiousness with medical marks. A studiousness score for 62 of the medical school students was obtained from the Young-Estabrooks Scale of Studiousness. Its correlation with success in medical school was .38. This is higher than studiousness correlates with college marks. Hence, the studiousness of premedical students as freshmen can be said to be an important factor in making for success in medical school.

In spite of a low relation to medical marks, the aptitude test is sufficiently distinct from college marks to make a real contribution to the prediction.

There are two other factors which make for success in medical school. One that makes the least difference for success is the department in which the student concentrates in college. To study this question, medical students were divided into three groups: (1) those who concentrated in chemistry; (2) those who concentrated in zoology; and (3) those who concentrated in some other department. Two students in the third group split their major between chemistry and zoology. The correlation ratio showed that there was no difference in predicted ability (i. e., medical mark predicted from ability) among the three groups but there was a slight tendency for groups 3 and 1 to make better marks in medical school than those concentrating in zoology.

This is shown more clearly in Table 3.

Medical school marks show that those majoring outside of chemistry or zoology make about 1 mark point higher than expected and those in chemistry do

a little better than average, but those concentrating in zoology make almost 3 mark points lower than would be expected from students of that ability.

This leads to the tentative conclusion that other things being equal, premedical students may major in any department without sacrifice. Perhaps, they might just as well concentrate in psychology, German, biology, or history, as 12 of these students have done. This does not suggest that students need take no zoology and little chemistry but rather that they need not take so much of it. Twelve cases, however, are insufficient for definite conclusions.

TABLE 3. RELATIVE SUCCESS OF STUDENTS WHO CONCENTRATED IN DIFFERENT DEPARTMENTS

Predicted medical mark based on ability	Actual medical mark	Amount by which actual exceeds predicted medical mark
Chemistry 80.48	81.01	+ .36
Zoology 79.44	77.59	—2.64
Others 79.64	80.56	+ .95
η=.11	η=.22	

The most important factor of the two that were just mentioned is the "difficulty" of the medical school. The difficulty of a medical school can be defined as the difference between the average mark a group of students makes and what the group has been predicted to make according to its abilities. If a group of average ability were to go to medical school, it would be expected to make an average medical school mark. If it made an above average mark at medical school A, this medical school could be described as being relatively easy. Conversely, if the group received a mark much below average at medical school B,

TABLE 4. DIFFICULTY OF DIFFERENT MEDICAL SCHOOLS SHOWN BY COMPARING PREDICTED TO ACTUAL MARK

Medical School Code Number	N	Predicted Medical Mark Showing Ability	Actual Medical Mark	Amount Actual Mark Exceeds Prediction
1	10	84.66	81.70	—2.96
2	8	76.46	74.89	—1.57
3	23	80.54	81.88	+1.34
4	7	83.04	82.00	—1.04
5	9	75.58	75.01	— .57
Combination	28	80.29	81.13	+ .84
		η=.620	η=.468	

this medical school would be considered relatively difficult. It is assumed here that the difference is due to more severe competition at one medical school than at another. Hence, it is termed "difficulty."

Students are divided into six groups to study this problem. Groups of from 7 to 23 students attended 5 medical schools and 28 students attended all other medical schools. Table 4 shows how great the variability among the six groups was.

The magnitude of the difference in difficulty can be appreciated from the fact that the total range from the passing mark of 70 to the highest mark of 92 is only 22 points. Compared to this, a difference of 4.3 points between the mark of an average student in medical school No. 1 from the mark of an average student in medical school No. 3 gains in its proper perspective.

The fact that the differences in predicted mark are greater than the difference in actual mark, as shown by an η of .620 and .468, respectively, merely is further evidence of the fact that medical schools differ in "difficulty."

The meaning of the predicted medical mark needs to be made clearer, since it is used to designate the ability of a student. It is the mark a student of given abilities ought to make, other things than the abilities being equal. Each student's predicted mark is estimated from a single equation. Thus all students of the same abilities will get the same predicted mark. Actual medical marks of two students of the same ability may differ, due to factors not included in the multiple. Examples of such factors are: what a student studied in college; the "difficulty" of the medical school, etc. The predicted medical mark is based only on the abilities employed in the multiple correlation.

HOW ACCURATE A PREDICTION OF MEDICAL SCHOOL SUCCESS CAN BE MADE?

Colleges and universities have for a long time been predicting the average marks which their entering freshmen will make. Using the best battery they can obtain, the correlation between their predictions and actual marks is usually in the neighborhood of .70. Some achieve a slightly better or worse prediction. The correlation obtained in this study between the prediction and actual medical school marks proved to be .60 with the battery of the 5 variables mentioned in Table 1. With only three of the items—aptitude, quality points in department of concentration, and quality points out of department of concentration—a multiple of .58 was obtained.

These correlations are lowered to some extent by the fact that the medical schools to which students go are of different "difficulty." When corrections for these differences are taken into account, the multiple correlation rises from .60 to .65.[2] The correlation could, then, be said to be the relationship which would have been found if all medical schools had been of equal difficulty. It has practical significance for the counselor because he may correct each student's predicted score according to the difference given in Table 4 and get a more accurate prediction.

The correlation of .65 is still .05 lower than the multiple correlations obtained by colleges in predicting success of their students. This crucial difference may be due to the fact that while colleges use a large number of freshmen in one year, this study to get sufficient cases was forced to include students in college over an eight year period. Measures of intelligence, aptitude and marks depended to some extent upon the ability of each year group either local or national. Slight

2. Obtained by adding the difference in column 3, Table 4 to each student's predicted medical school mark and calculating a new correlation coefficient.

differences in the norms from year to year would tend to lower all correlations. Medical schools giving a battery of intelligence and aptitude tests to an entering class could probably fairly easily obtain a correlation of .70.

The answer to the original question must now be given. The prediction has a large error in it, for only about 42 per cent of the variance is accounted for by a correlation of .65; 58 per cent of the variance is unaccounted for. Judging from

TABLE 5. EQUIVALENT MARKS AND RANKS FOR SCALES WITH PASSING POINTS OF 70 AND 75

	Passing Mark=70		Passing Mark=75	
Mark	Frequency	Rank	Frequency	Rank
100				
99				
98			1	
97	1		0	1
96	0	1	1	1
95	1	1	2	2
94	1	2	1	4
93	1	3	3	5
92	2	4	3	8
91	2	6	5	11
90	3	8	5	16
89	3	11	6	21
88	5	14	7	24
87	5	19	8	34
86	6	24	8	42
85	6	30	8	50
84	7	36	8	58
83	7	43	7	66
82	7	50	6	73
81	7	57	5	79
80	6	64	5	84
79	6	70	3	89
78	5	76	3	92
77	5	81	1	95
76	3	86	2	96
75	3	92	1	98
74	2	94	0	99
73	2	96	1	99
72	1	97		100
71	1	98		
70	1	99		
69	0	99		
68	1	100		
67				
66				
65				

the experience of colleges in predicting success, more than 13 per cent of this unaccounted for variance is due to the fact that intelligence and aptitude tests and marks are not exactly comparable from year to year. Some is due to the personal element in marking and some due to variables not measured, such as studiousness and special abilities demanded in medical school but not in high school or college.

This leaves only one rather technical point to be cleared up. How were the

medical schools equated when there are such wide differences in marking systems? This is a vital part of this study, for a low multiple correlation may be obtained by failure to equate the marking systems properly. Secondly, differences in "difficulty" may be confused with the differences in marking systems and passing points. There were three different marking systems and two passing points among the medical schools studied.

Equating of marking systems was done entirely on the assumption of a normal distribution: medical schools reported ranks in class only, reported both ranks and marks, and reported marks only. Some of the last group used a passing mark of 70 and some of 75. All ranks were changed to marks and all marks based on a passing point of 75 were changed to a mark based on a passing point of 70. Marks were used instead of ranks to place failures on the scale. The scale given in Table 5 was constructed from the distribution normally expected. First, marks with a passing point down to 70 were listed in column 1. Then the frequencies expected in a normal distribution were listed in column 2. From the cumulative frequencies, ranks corresponding to the scores in column 1 were obtained. Next, from tables of probability, frequencies were listed for a marking system with a passing point of 75 (column 4). From this, ranks in column 5 were obtained by cumulating the frequencies in column 4.

The table was used in the following manner. If a student obtained a mark of 91 on a scale with a passing point of 70, his mark remained 91. If he obtained a mark of 91 on a scale with a passing point of 75, his rank in column 5 was 11. This rank on a passing scale of 70 (column 3) would give a mark of 89. Of course, if his rank in a class of 100 was 19, his assigned mark was 87. This process achieved the desired result of having all medical schools using the same normal scale of marking, without correcting the marks or the ranks for differences in difficulty of the medical schools. The problem was seen simply as one involving marking systems.

CONCLUSIONS

1. Selection of students high in intelligence, aptitude and college marks has not taken place to a very significant extent during the past eight years, as a whole.

2. During the past four years, selection with respect to intelligence has improved. But medical students are not any more highly selected in college achievement than in the early 30's. This tentatively indicates that colleges are putting more faith in intelligence test scores than in college marks as a basis for predicting success.

3. Many excellent premedical students have been lost to business and to graduate schools.

4. Marks in college both in major department and out of major department are factors most closely related to success in medical school. Aptitude is important. But intelligence and high school achievement have nothing to contribute in addition to the other three variables. Further study may indicate that it is unwise to advise a pupil against taking a premedical course on the basis of high school intelligence records or high school marks.

5. The department in which a student concentrates seems to make little difference. The conclusion cannot be drawn that medical students should take no science for all 85 students studied science. However, the trend toward requiring more science for entrance into medical school does not square with the facts. As a selective device it may be wise, but educationally it is unjustified. Medical schools could select more accurately on the basis of general college marks and an aptitude test.

6. Great differences appear in the relative "difficulty" of medical schools. Failure to take this into account when advising a student is apt to upset predictions of success.

7. Studiousness in college is significantly related to success in medical school.

Study of Applicants for Admission to the 1940 Freshman Class of the Medical Colleges in the United States

Thirteenth Study

FRED C. ZAPFFE

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Chicago, Illinois

The information concerning applicants which this study presents is made use of in diverse ways. Many medical colleges check their freshman class against the study. Many organizations, the government medical services, and other groups and agencies request information which only this study can supply. Therefore, it has been well worth while to make it although it does call for a considerable amount of extra work by the office force of every college and by the headquarters staff of the Association of American Medical Colleges. Furthermore, it is the only source from which the information given can be obtained.

TABLE 1—SUMMARY OF TOTALS FOR SIX YEARS OF ALL APPLICANTS

	1935	1936	1937	1938	1939	1940
No. Applications	34,427	35,439	34,416	36,268	34,871	34,434
No. Applicants	12,740	12,192	12,207	12,131	11,800	11,854
Single Applicants	7,231	6,657	6,564	6,249	6,089	6,146
Accepted	3,980	3,538	3,423	3,117	3,064	3,161
	55.4%	53.1%	52.1%	49.9%	50.3%	51.2%
Rejected	3,251	3,119	3,141	3,132	3,025	2,985
Multiple Applicants	5,509	5,535	5,643	5,882	5,711	5,708
Accepted	2,920	2,927	2,987	3,106	3,147	3,167
	53.0%	52.8%	52.9%	52.8%	55.1%	55.5%
Rejected	2,589	2,608	2,656	2,776	2,564	2,541
Applicants Accepted	6,900	6,465	6,410	6,223	6,211	6,328
	54.1%	53.0%	52.5%	51.3%	52.7%	53.4%
Applicants Rejected	5,840	5,727	5,797	5,908	5,589	5,526

Table 1 presents data covering a period of six years for purpose of comparison. Variations will be noted. Since the depression years, the number of applicants has lessened, from 12,779 in 1934 to 11,854 in 1940. The most marked variation occurred in the number of applicants accepted by medical colleges. There has been a steady drop from 57.9 per cent in 1934 to 53.4 per cent in 1940. These figures refute the statements often made by those who are not familiar with the actual state of affairs that only 20 per cent of applicants are accepted. That has never been the case. At least 50 per cent of applicants are accepted. In 1940 a slightly greater number was accepted than in 1939, probably because of selective service, to ensure a graduation class at least as large as in preceding years.

Table 2 presents similar data on the women applicants. It shows that while the number of applicants is less than in preceding years, the number of applications made is greater. The majority of the women applicants sought admission

to a coeducational college. The percentage of women accepted was slightly less than the percentage of men accepted, 51.8 as against 53.4.

TABLE 2—SUMMARY OF TOTALS FOR SIX YEARS OF WOMEN APPLICANTS

	1935	1936	1937	1938	1939	1940
No. Applications	1,443	1,384	1,397	1,491	1,536	1,621
No. Applicants	636	659	649	642	632	585
Single Applicants	439	441	398	354	377	341
Accepted	230	216	209	165	174	178
	54.7%	52.5%	52.8%	46.6%	46.1%	52.2%
Rejected	209	195	89	189	203	163
Multiple Applicants	250	248	251	288	255	244
Accepted	149	157	132	157	147	125
	59.6%	63.3%	52.6%	54.5%	57.6%	51.2%
Rejected	101	91	119	131	108	119
Applicants Acepted	379	373	341	322	321	303
	55.0%	56.6%	52.4%	50.0%	50.8%	51.8%
Applicants Rejected	290	286	308	320	311	282

Table 3 presents data on acceptance as related to years of college work. Marked variations are noted in these figures. Whereas in former years, applicants with less than three years of college work had as good a chance of being accepted as did the applicants with more than three years of college work, in 1940, only 38.7 per cent of that group was accepted, whereas more than 55.0 per cent of the three years of college work and the degree holding group was

TABLE 3—DATA ON ACCEPTANCES ACCORDING TO YEARS OF COLLEGE WORK—1940

	Single Applicants		Multiple Applicants		
1940	Accepted	Rejected	Accepted	Rejected	Totals
2-3 years	175	259	10	34	478
3-4 years	1,291	850	555	497	3,193
4 or more years	186	268	130	272	856
A.B. Degree	807	654	1,423	942	3,826
B.S. Degree	686	590	1,039	770	3,065
Other degrees	14	85	7	9	65
Not Stated	22	329	3	17	371
	3,161	2,985	3,167	2,541	11,854

accepted. Of the A.B. group, 58.3 per cent were accepted; of the B.S. group, 55.6 per cent; of the three years group, 57.5 per cent. These figures can be taken to indicate that preference is given to those applicants who have spent three or more years in college. As a matter of fact, since scholarship enters largely into selection, it is more than probable that these percentages reflect the degree of scholarship rather than length of preparation. The bachelors make more multiple applications than do the other groups. In the three years group are the most single applicants.

Table 4 presents data referrable to the individual medical colleges. Here, it is not a question of applicants but of applications received. It is not possible, without considerable work, to have this table show the number of applicants. It shows the total number of applications received, the number accepted and the number rejected, and finally, how many of the applicants accepted enrolled. Many of the multiple applicants who have a good scholarship record are accepted

TABLE 4—DATA BY COLLEGES ON TOTAL NUMBER OF APPLICATIONS MADE AND ACCEPTANCES AND REJECTIONS (MEN AND WOMEN)

	Applications			Students
	Accepted	Rejected	Total	Enrolled
Alabama	51	344	395	
Arkansas	87	91	178	
College Medical Evangelists	76	91	167	
California	80	167	247	
Southern California	64	213	277	
Stanford	85	234	319	
Colorado	71	39	110	
Yale	71	418	489	
Georgetown	94	474	568	
George Washington	114	451	565	
Howard	90	265	355	
Emory	78	154	232	
Georgia	71	47	118	
Chicago Medical	107	69	176	
Chicago	149	698	847	
Illinois	161	196	357	
Loyola	52	107	159	
Northwestern	212	1285	1497	
Indiana	151	797	948	
Iowa	92	72	164	
Kansas	101	151	252	
Louisville	156	604	760	
Louisiana	123	261	384	
Tulane	185	321	506	
Johns Hopkins	94	304	398	
Maryland	90	190	280	
Boston	89	336	425	
Harvard	146	579	725	
Tufts	132	251	383	
Michigan	152	525	677	
Wayne	74	77	151	
Minnesota	120	92	212	
Mississippi	37	21	58	
Missouri	50	30	80	
St. Louis	212	811	1023	
Washington	133	564	697	
Creighton	96	208	304	
Nebraska	111	42	153	
Dartmouth	23	162	185	
Albany	71	542	613	
Buffalo	86	607	693	
Columbia	136	920	1056	
Cornell	133	844	977	
Long Island	132	798	930	
New York Medical	87	650	737	
New York University	128	685	813	
Rochester	86	499	585	
Syracuse	60	436	496	
Duke	100	436	536	
North Carolina	52	92	144	
Wake Forest	44	81	125	
North Dakota	30	146	176	
Cincinnati	82	692	774	
Ohio	77	201	278	
Western Reserve	117	659	776	
Oklahoma	73	89	162	
Oregon	77	320	397	
Hahnemann	229	694	923	

	Applications			Students
	Accepted	Rejected	Total	Enrolled
Jefferson	181	525	706	
Pennsylvania	164	941	1105	
Pittsburgh	95	208	303	
Temple	124	1004	1128	
Woman's	52	81	133	
South Carolina	43	334	377	
South Dakota	31	45	76	
Meharry	97	124	221	
Tennessee	192	252	444	
Vanderbilt	63	492	555	
Baylor	96	145	241	
Texas	102	139	241	
Utah	41	41	82	
Vermont	32	54	86	
Med. Coll. of Virginia	102	477	579	
Virginia	95	276	371	
West Virginia	35	44	79	
Marquette	102	426	528	
Wisconsin	75	92	167	

by more than one college to which application is made; in fact, in some instances, all the colleges applied to gave acceptance (table 5). In case of multiple acceptances, the college of first choice is the one which the applicant enrolls. Until the higher brackets of multiple applications are reached, the fact that a student has made more than one application does not have special significance other than that he wants to make certain that some medical college will accept him.

TABLE 5—DATA ON 5,708 MULTIPLE APPLICANTS
NUMBER OF APPLICATIONS MADE, ACCEPTANCES AND REJECTIONS

1743 made 2 applications each
- 777 had no acceptances
- 732 had 1 acc
- 234 had 2 acc

1108 made 3 applications each
- 417 had no acceptances
- 461 had 1 acc
- 183 had 2 acc
- 47 had 3 acc

776 made 4 applications each
- 318 had no acceptances
- 282 had 1 acc
- 134 had 2 acc
- 36 had 3 acc
- 6 had 4 acc

495 made 5 applications each
- 224 had no acceptances
- 171 had 1 acc
- 61 had 2 acc
- 28 had 3 acc
- 8 had 4 acc
- 3 had 5 acc

363 made 6 applications each
- 164 had no acceptances
- 120 had 1 acc
- 51 had 2 acc
- 18 had 3 acc
- 7 had 4 acc
- 3 had 5 acc

229 made 7 applications each
- 99 had no acceptances
- 69 had 1 acc
- 33 had 2 acc
- 18 had 3 acc
- 7 had 4 acc
- 2 had 5 acc
- 1 had 6 acc

226 made 8 applications each
- 113 had no acceptances
- 79 had 1 acc
- 20 had 2 acc
- 6 had 3 acc
- 5 had 4 acc
- 2 had 5 acc
- 1 had 6 acc

148 made 9 applications each
- 71 had no acceptances
- 50 had 1 acc
- 15 had 2 acc
- 7 had 3 acc
- 4 had 4 acc
- 1 had 5 acc

116 made 10 applications each
- 59 had no acceptances
- 37 had 1 acc
- 9 had 2 acc
- 8 had 3 acc
- 1 had 4 acc
- 2 had 6 acc

95 made 11 applications each
59 had no acceptances
24 had 1 acc
6 had 2 acc
4 had 3 acc
1 had 4 acc
1 had 7 acc

65 made 12 application each
34 had no acceptances
19 had 1 acc
5 had 2 acc
5 had 3 acc
1 had 4 acc
1 had 6 acc

68 made 13 applications each
47 had no acceptances
16 had 1 acc
3 had 2 acc
2 had 3 acc

57 made 14 applications each
39 had no acceptances
13 had 1 acc
4 had 2 acc
1 had 3 acc

41 made 15 applications each
23 had no acceptances
14 had 1 acc
4 had 2 acc

33 made 16 applications each
18 had no acceptances
11 had 1 acc
2 had 2 acc
2 had 4 acc

21 made 17 applications each
15 had no acceptances
4 had 1 acc
2 had 2 acc

20 made 18 applications each
17 had no acceptances
3 had 1 acc

16 made 19 applications each
11 had no acceptances
3 had 1 acc
1 had 2 acc
1 had 3 acc

16 made 20 applications each
10 had no acceptances
4 had 1 acc
1 had 2 acc
1 had 3 acc

14 made 21 applications each
11 had no acceptances
3 had 1 acc

8 made 22 applications each
6 had no acceptances
1 had 1 acc
1 had 5 acc

7 made 23 applications each
3 had no acceptances
4 had 1 acc

9 made 24 applications each
7 had no acceptances
1 had 1 acc
1 had 3 acc

6 made 25 applications each
5 had no acceptances
1 had 3 acc

10 made 26 applications each
7 had no acceptances
3 had 1 acc

7 made 29 applications each
3 had no acceptances
3 had 1 acc
1 had 3 acc

1 made 30 applications each
1 had no acceptances

3 made 31 applications each
1 had no acceptances
2 had 1 acc

4 made 33 applications each
2 had no acceptances
1 had 1 acc
1 had 2 acc

1 made 35 applications
1 acceptance

1 made 39 applications
No acceptance

1 made 41 applications
No acceptance

Table 7 presents the data on the multiple applicants. It shows the number of applicants who made more than one application, from two to forty-one applications, the number rejected and the number accepted. Thirty per cent of the 5,708 multiple applicants made two applications; 20 per cent made 3 application; 13 per cent made 4 applications; 8.6 per cent made 5 applications; 17 per cent made from 6 to 9 applications; 7 per cent made from 10 to 14 applications; 2 per cent made from 15 to 19 applications and 1.3 per cent made from 20 to 29 applications. Eleven students made more than 30 applications. The largest number of applications made by one student was 41, with no acceptances.

Table 5 presents the geographic distribution of all applicants. The grouping

by states was the same for the first eighteen states named in 1940 as it was in 1939. From there on, there is much variation. Foreign countries were represented by 228 applicants. Puerto Rico had the greatest number of applicants by far. Canada had 33; Hawaii had 31; Central American Republics, 13.

TABLE 6—GEOGRAPHIC DISTRIBUTION OF ALL APPLICANTS

	Single	Multiple	Total		Single	Multiple	Total
New York	699	1321	2020	Rhode Island	17	39	56
Pennsylvania	441	565	1006	North Dakota	40	12	52
California	332	343	675	South Dakota	37	14	51
Illinois	393	278	671	New Hampshire	20	21	41
Ohio	260	341	601	Montana	18	21	39
New Jersey	163	343	506	Maine	12	25	37
Texas	259	171	430	Arizona	10	22	32
Massachusetts	151	272	423	New Mexico	12	13	25
Indiana	293	96	389	Delaware	5	13	18
Michigan	207	138	345	Wyoming	9	6	15
North Carolina	145	88	233	Nevada	—	6	6
Wisconsin	151	73	224	Alaska	3	2	5
Minnesota	159	53	212				
Georgia	113	88	201	Foreign Countries			
Louisiana	140	56	196	Canada	20	13	33
Iowa	145	34	179	Mexico	2	1	3
Missouri	97	79	176	Africa	4	2	6
Kansas	109	39	148	Asia			
Virginia	137	60	197	China	5	4	9
Washington	67	124	191	India	1	1	2
Tennessee	143	47	190	Japan	2	—	2
Kentucky	102	68	170	Manchuria	—	1	1
Connecticut	51	105	156	Syria	—	1	1
South Carolina	102	49	151	Central America	6	7	13
Oklahoma	101	46	147	Europe			
Alabama	97	49	146	Austria	—	1	1
Nebraska	110	30	140	Denmark	1	—	1
West Virginia	60	74	134	Poland	1	—	1
Mississippi	76	50	126	Scotland	2	1	3
Florida	65	59	124	Switzerland	1	—	1
District of Columbia	86	31	117	Australia	1	—	1
Colorado	87	22	109	Hawaii	5	26	31
Arkansas	84	19	103	Philippine Islands	4	3	7
Utah	50	46	96	West Indies			
Oregon	55	36	91	Cuba	1	1	2
Vermont	44	16	60	Puerto Rico	43	66	109
Idaho	26	32	58	Virgin Island	2	—	2

Instruction in Social and Economic Aspects of Medicine

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It is only recently that we have come to recognize the full importance of the social and economic aspects of medicine and the necessity of adapting the practice of medicine to changing conditions. Increasingly, it is realized that a well-rounded education, both professional and general, must take cognizance of the interrelationship of medicine, sociology and economics if it wants to live up to its promises. Universities which are eager to "cultivate methods of thought and principles of action applicable in the conduct of life" (C.-E. A. Winslow) obviously begin to see the great issue at stake. A recent survey[1] lists a considerable number of institutions of higher learning as actually offering courses on what is believed to fall under the category "social medicine." The odd assortment of widely different subject matter, ranging from sewage disposal and food control to home hygiene and emotional problems affecting health and disease, reflects the varying interpretation of the term "social medicine."

What, then, should be the content of courses centered on the social and economic aspects of medicine? There are two themes around which a teaching program may be built:

(1) How and to what extent has society made use of the facts discovered by scientific medicine so as to organize good medical care for all the people without discrimination and at a price which is fair to all?

(2) How and to what extent does the progress of medicine bear on social, economic and cultural conditions?

In other words, the purpose of teaching social and economic aspects of medicine should be to trace medical care as an element in society's endeavor for its own well being, and medicine in its rôle as a handmaiden of civilization.

The term "medical care" is used in its widest sense. It includes services of physicians, dentists, nurses and associated personnel as well as hospital care in its various forms. It covers preventive services for the well, curative services for the acutely and chronically sick, and care for the permanently disabled. In contrast to the clinical concept the approach is not centered on the individual case but on such elements as are common to groups of people living under similar social, economic and cultural conditions.

Teaching for whom? There are several groups, medical and non-medical, to whom courses on "medical care" should be offered. The content of the courses should be adapted to the special needs of these groups according to their varying interests.

1. Hirsh, J., and Pritchard, E. G.: Teaching of Social Medicine in Liberal Arts Colleges and Universities. Pub. Health Rep. 55: No. 45, 1940.

The most important group is represented by the medical profession. Faced with rapidly changing professional, social and economic conditions, the doctor in practice and even more the student in medical school wonders about his place in the social universe. In general, he is surprised and confused, often even embittered, by developments he finds hard to understand. This alone would be sufficient reason for an educational project to promote understanding of problems which are inevitable. Effective social discipline, the discipline of free men, must be predicated on dissemination of factual information, which is essential to active cooperation. In addition, there are a growing number of new professional opportunities in the field of medical care. Many of these special lines might attract forward looking men. Yet, at present, physicians as well as medical students have little chance of learning about these possibilities. It is here that universities with schools of medicine can find a great opportunity in training students to make use of their own minds. However, there are some pitfalls. The wide ramifications of the subject matter may lure the teacher into an attempt to cover a wide ground rather than to cultivate a strictly defined field. On the other hand, a narrow interpretation of the subject matter may result in a plan of instruction which does not go beyond the art of collecting doctor's bills or the business of running a fashionable practice. And last, but not least, the controversies surrounding the subject may induce the teacher to sacrifice factual and impartial presentation in order to please pressure groups of all kinds.

The aim of such a course should be to supplement education in the "technology of medicine" by considering the sociological side of medicine. Fundamental concepts, common elements of various developments and prevailing social philosophies, rather than details of procedure, should be emphasized in a plan of basic orientation deliberately limited to such subjects as have an impact on professional life. It should not be forgotten that the medical student is not a diminutive health officer and that the average practicing physician is not a little administrator.

A second group, closely related to those who want to enter or are engaged in the practice of private medicine, are health officers and medical officers in the service of public or private agencies.

The health officer of the past was chiefly concerned with sanitation of the environment, control of communicable diseases and health education. The health officer of the future probably will have, in addition, considerable responsibility for guidance and supervision of medical care programs, serving as liaison officer between the medical profession and the public and private agencies involved. It is only by possessing the knowledge of essential facts that the health officer will be able to analyze his local situation and to lead the way to cooperation in community planning. In addition, there is every reason to believe that medical participation in organization and administration of medical care programs will gain momentum outside of public health administration. Welfare departments throughout the country are beginning to appoint physicians to handle the professional side of medical care programs for the indigent. Group Hospital Plans

are increasingly employing physicians for research, supervision and administrative advice. Prepayment plans need physicians for the same purpose. The health preparedness program will necessarily accentuate the demand for trained physicians able to be leaders in the development of medical care programs.

Yet, physicians interested in these lines are still compelled to learn "on the job" by trial and error; they may serve with welfare departments, prepayment plans for medical care, or group hospital plans. Whether such a situation is economical is open to serious doubt. That learning "on the job" may produce men with considerable skill in carrying out strictly limited functions is certain. What cannot be obtained this way is the broad background and the comprehensive knowledge of basic principles and essential facts. These alone give the firm foundation necessary to tackle any problem related to organization and administration of medical care programs.

The need for qualified specialists can be met in two ways: (1) by including in the curriculum of public health students a broad training in the social and economic aspects of medicine and (2) by the establishment of special training facilities, not to exceed one school term, for physicians, health officers and administrators whose main line is "administrative medicine." For the first group, the aim must be to provide a synthetic picture of the entire field of medical care, showing how far, and with what success, society has utilized the facts discovered by medical research for the actual amelioration of the conditions of human life. Such a course should give a historical background, which is essential for an understanding of modern programs; it should interpret and evaluate the principles involved in preventive and curative methods as related to the changing social order; it should summarize the methods and results obtained in the organization of medical care. Emphasis should be placed on condensing into the brief compass of a limited number of hours the enormous amount of material which must be brought into the scope of such a course; on providing for opportunities to watch typical programs and procedures in operation; and on opportunity for the exchange of ideas. For the second group, the aim must be to provide for a comprehensive and thorough training in both general policy and administrative procedure, including ample provision for field work and interpretation of experience during practical work.

The third group which should be included in a long-range program of teaching social and economic aspects of medicine is composed of social workers and nurses. The coordination of medical and social work, both taken in their widest sense, is a problem of utmost importance to progress in both lines. Nursing students should be prepared for the social responsibilities which they must meet in the field of medical care. Social workers, associated with public and private health or welfare agencies, as well as students of schools of social work should be given an opportunity to learn about developments and programs which have a bearing on their professional life. A plan of instruction designed to widen the scope and deepen the nature of education actually offered by schools of social work and schools of nursing, should include (1) a broad survey of available resources and

actual needs in the field of medical care in general, (2) an analysis of the elements common to the bewildering variety of services, techniques and programs which have come into existence and (3) an interpretation of the current problems of coordinating medical and social work. The main emphasis should be placed on the whole rather than on details of procedure. Basic policies adopted and the fundamental issues at stake should occupy a dominant place in the plan.

Students of sociology, economics, government and law represent a fourth group to be considered in the development of a broad educational program on medical care. Here the aim should be to study the interrelationship of social and medical science by analysis and evaluation, under expert guidance, of such policies and procedures as are relevant to the mutual understanding of social scientists and physicians in their common efforts for human betterment.

PLAN ADOPTED AT YALE UNIVERSITY.—The Department of Public Health (Chairman, Professor C.-E. A. Winslow) Yale University School of Medicine, has taken several steps along the lines described before.

Plan of Instruction for Medical Students.

Since 1915, candidates for the medical degree are required to take a course on "Principles of Public Health." This specific instruction is designed for two main purposes, to supplement previous courses by material dealing with environmental sanitation and other topics not covered elsewhere, and to gather together what has already been learned about preventive medicine into the form of a coordinated community program, so that the individual practitioner may realize his own activities as a part of a larger whole.[2] This course includes three lectures on basic problems of medical care.

Efforts to devise practical methods of helping medical students to secure a better understanding of the backgrounds of the people with whom they work, of the various community resources available, and of the relation of the physician to the total situation, led, in 1929, to the development of clinical public health case conferences for fourth year students.[3]

A third step was taken in 1939 with the establishment of a course on "Social Backgrounds of Medical Care," conducted as an elective in ten two-hour sessions. The subjects of discussion can be seen from the following outline.

SOCIAL BACKGROUNDS OF MEDICAL CARE

A Course for Medical Students

1. ***Economic and social developments during the last decades and their bearing on medicine.***

Changes in the economic system, in the framework and character of society, in the size and age distribution of populations, and in social philosophy as related to medicine, both preventive and curative.

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2. Winslow, C.-E. A.: Department of Public Health, Yale University. Methods and Problems of Medical Education, Tenth Series, New York, The Rockefeller Foundation, 1938.

3. Hiscock, Ira V.: Clinical Public Health Case Studies by Medical Students, with Special Reference to Home Visits. J. Assoc. Am. M. Colls., 14: March, 1939.

2. *The supply of physician's services.*

Number, geographic distribution, ratio of physicians to population; trends of medical education; income of physicians; the bearing of a changing social scene on the place of the physician in the community health program.

3. *The supply of hospital services.*

History and development of the modern hospital; the growth of hospitals; the responsibility for the growth of hospitals; the purchase of hospital care; the hospital in a changing social scene and the problems involved.

4. *The extent and costs of medical care.*

Volume of physicians', nursing, and hospital care as received by various income groups; need and demand for medical care; family and national expenditures for medical care; the actual situation from the angle of the people, the medical profession, the hospital, the community.

5. *Recent developments in organization of medical care.*

Programs sponsored by the medical profession, the hospitals, the "consumers," industry and business, universities, voluntary agencies, government. Tax-supported programs; prepayment plans for medical care and group hospital plans.

6. *Proposals actually under consideration.*

The Hospital Bill, the National Health Program and the Wagner Bill; pending legislation in various states; the Platform of the American Medical Association. The recommendations of the Committee for the Improvement of Medical Care.

Plan of Instruction for Specialists in Health and Welfare Work.

In 1939, the teaching program of the department of public health at Yale was expanded to include a formal training in social and economic aspects of medicine.

After a number of lectures on selected subjects had been offered tentatively during the academic year 1938-1939, the first comprehensive course was given during the year 1939-1940. The problem of "Medical Care in Modern Society" was presented in 30 sessions.

At present the schedule is as follows:

(1) Lectures combined with discussion periods and reports by students on assignments are given in about 30 sessions during the first term, twice a week for two hours.

(2) Within this course guest speakers are given the opportunity to present their personal opinions on controversial questions so as to give the students as complete a picture as possible.

(3) In addition to the theoretical training students are offered the opportunity to visit certain institutions and agencies to get a first hand knowledge of such forms of organization and administrative procedures as are essential to the understanding of basic problems. The students are to make written notes on each visit, these notes being used for class discussion and interpretation.

(4) Important problems of purely administrative character are discussed within a course on Public Health Administration. So far, four two-hour sessions have been set aside for this purpose in this course.

The course described under (1) and (2) is taken by all physicians who study public health including candidates for the Doctorate in Public Health. The course in Public Health Administration is one of the basic courses required for the degree of Master of Public Health.

The following outlines of the subjects discussed, assignments given, and field work provided may serve to illustrate the details as to the content of the plan of instruction and the teaching method adopted.

MEDICAL CARE IN MODERN SOCIETY

A Course for Public Health Students

PART ONE: FUNDAMENTALS

1. The rise of scientific medicine and its bearing on organization of medical care.
2. Economic and social developments during the last decades and their bearing on organization of medical care.
3. The supply of physicians', dentists', and nursing services. The physician in a changing social scene.
4. History and development of the modern hospital.
5. The supply of hospital services. The hospital in a changing social scene.
6. Volume of care by physicians, dentists, nurses, and hospitals as received by various income groups of the population.
7. The costs of medical care from the viewpoint of the family and the national economy.
8. The actual needs for organized medical service from the angle of the consumers, the medical and allied professions, the hospitals and the community. Highlights of recent developments to meet these needs.
9. Society's attitude toward sickness in various phases of history. The rise of public responsibility for organizing medical care.
10. The various methods of distributing medical services. Group practice of medicine. Achievements and shortcomings.
11. The various methods of paying for medical care by collective action. Nature, definition and distinction of tax-support, state-medicine, and insurance against the economic risks of sickness.
12. Arguments against new methods of distributing and paying for medical care.
13. Summary.

PART TWO: TAX-SUPPORT OF MEDICAL CARE

14. Tax-supported medical care as used in the campaign against acute communicable diseases; tuberculosis; and venereal diseases.
15. Tax-supported medical care as used in the campaign against mental diseases and defects; cancer; dental diseases and defects.
16. Tax-supported medical care for such population groups as are exposed to health dangers due to their sex or age. Maternity services. Medical care for infants, children, and students of colleges and universities.
17. Tax-supported medical care for occupational and special groups of the population. Medical care for army and navy, war veterans, merchant seamen, Indians, etc.
18. Tax-supported medical care for the indigent. The policy pursued in various phases of history.
19. Determination of scope and amount of public medical care. Determination of eligibility for medical care at public expense.

20. Procedure in providing "home medical care" for the indigent. Systems of organizing physicians' services.
21. Establishment of proper administrative procedure in providing for public medical care at home, office, clinics, and hospitals.
22. Administrative supervision of "home medical care" and hospital care at public expense. Experience with existing programs.
23. Tax-supported medical care in rural areas. "Regional services" as developed in the U.S.A. and in foreign countries.
24. Summary.

PART THREE: INSURANCE AGAINST THE ECONOMIC RISKS OF SICKNESS

25. The various types of voluntary "health insurance" and their relative merits.
26. Insurance against the costs of hospitalization.
27. Prepayment plans for medical care, covering physicians' care or a variety of services.
28. Achievements and shortcomings of voluntary "health insurance."
29. Industrial accident insurance (Workmen's Compensation).
30. Compulsory sickness insurance. Principles of foreign schemes. Movement in the U.S.A.
31. Summary.

PART FOUR: GENERAL MEDICAL CARE PROGRAMS

32. The alternatives in developing broad programs of medical care. Relative merits of tax-support, voluntary prepayment, and compulsory insurance.
33. The National Health Program, Wagner Bill, and Hospital Bill.
34. Proposals of the American Medical Association.
35. Proposals of the Committee for the Improvement of Medical Care, the American Hospital Association and other organizations.

ASSIGNMENTS IN CONNECTION WITH THE COURSE ON MEDICAL CARE IN MODERN SOCIETY

1. Baton Rouge, La., has a population of about 72,500 (Jan. 1939). Its retail area has a radius of 50 miles and a population of about 465,000. There are two general hospitals at Baton Rouge with a total of 200 beds. Appraise the hospital situation.

2. Suppose you were asked to determine the need and probable demand for medical care in a given area. What kind of material would you try to assemble so as to picture the actual situation as well as possible future developments?

3. Report on the findings of the "American Medical Association Study of Medical Care." What conclusions can be drawn from these studies?

4. Assemble factual information on the tuberculosis clinics actually in operation. Consider their total number, distribution, organization and control; type and extent of service given; type of patients receiving care.

5. Assemble factual information on the venereal disease clinics actually in operation. Consider their total number, distribution, organization and control; type and extent of service given; type of patients receiving care.

6. Assemble factual information on mental clinics actually in operation. Consider their total number, distribution, organization and control; type and extent of service given; type of patients receiving care. How much "medically supervised home care" is available?

7. Report on facilities for the treatment of cancer patients. What and how much is available, what is the trend of this development?

8. What has been done so far to provide medical care for crippled children? Assemble material on hospital facilities, by type of control; admissions; major causes of hospitalization; experience, medically and administratively.

9. Report on the health services for employees in the oil industry and comment on major achievements and shortcomings as to: (1) care of injured workers, and (2) care of sick workers.

10. Study the experience of the Associated Hospital Service of New York as to frequency of hospitalization of members; major causes of hospitalized illness; number of hospital days per eligible person and hospitalized case.

11. Report on the Western New York Medical Plan, Buffalo, and comment on its merits.

12. Analyze the cash indemnity plan sponsored by the Spaulding Employees' Mutual Benefit Association as to coverage of physicians' bills, hospital bills, compensation for wage loss.

FIELD WORK IN CONNECTION WITH THE COURSE ON MEDICAL CARE IN MODERN SOCIETY

Visits to

1.—the clinic-admitting office of a general hospital to watch the admitting of patients; function of the admitting physician; determination of eligibility for clinic service; preparation of the patient.

2.—several special clinics, affiliated with a general hospital to watch the scheduling of patient's care; instruction of the patient; relationship of one clinic to another; follow-up system.

3.—business office of a general hospital in a large community to learn about the main items of expense; sources of income; internal management.

4.—business office of a small rural hospital to watch internal management and relations with public and voluntary agencies.

5.—mental hospital to watch procedures in admitting, discharging, and follow-up of patients; internal management; functions of the institution; relation with health and welfare agencies.

6.—tuberculosis sanatorium to watch procedures in admitting, discharging, and follow-up of patients; internal management; functions; relation with health and welfare agencies.

7.—industrial company operating a complete medical care program for the employees and their dependents.

8.—medical division of a city welfare department in charge of "home medical care" for the indigent.

9.—medical division of a state welfare department administering public medical care.

10.—headquarters of a group hospital plan.

CONCLUSIONS

The plan actually in operation at Yale is admittedly an incomplete attempt to approach a new and urgent problem. This publication is primarily intended to start discussion and invite criticism. What a long range program ought to look like may be put down in the following recommendations, the first two of which should have preference over the others.

1.—The curriculum for medical students should provide for an orientation course on "Social and Economic Aspects of Medicine" to be given in about 12 two-hour sessions during one term. The ultimate goal should be to make a course of this kind required for students in the third year.

2.—The curriculum for public health students should provide for

(a) a special course on medical care to be given in about 30 two-hour sessions during one term.

(b) field work simultaneously with and following the theoretical training, preferably during the second term.

(c) training in special administrative techniques involved.

Attendance should be required of all physicians studying public health, and all other public health students in their second year. Completion of both theoretical and practical work should be required for the doctorate in public health.

A similar training with provision for intensive practical work should be made available to physicians, health officers and administrators whose principal activity is in the field of "administrative medicine." This group should receive credit for completion of both theoretical and practical work.

3.—Schools of nursing and schools of social work should include in their curricula an orientation course on the development and organization of medical care programs including provision for seminars on such topics as are of primary importance to the respective profession.

4.—Physicians in private practice should be offered orientation on organized plans of medical care by the establishment of regular one-day institutes and by extension courses offered by universities in cooperation with medical societies.

5.—Students of sociology, economics, government and law should be offered the opportunity of taking part in a "Study Unit on Social Medicine," to be conducted as an interdepartmental project for the primary purpose of promoting better understanding and intelligent citizenship.

Cooperation of Medical School Administrators with Medical Fraternity Chapters of the Campus

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Having never occupied an important executive position in a medical school, I probably see the implications of this subject differently than would one whose experiences had been either greater, or less, in this field. Such problems as have arisen, and such programs of a cooperative nature that have been undertaken by various medical schools and their medical fraternity chapters, I have viewed primarily from the chapter's viewpoint. Analytical data can, perhaps, not be gathered on this subject. Each one can discuss the subject only from his own experience, therefore varied opinions are to be expected.

My viewpoints result from active participation in the affairs of local chapters of Phi Rho Sigma fraternity located at five approved medical schools with which I have been identified as a student or a faculty member in the past sixteen years.

One must first clearly define the purpose of the organizations existing among medical students at any school before proceeding to a discussion involving these organizations. I believe that these objectives may be summed up correctly by simply stating that the primary reason for the existence of any organization among medical students is to help them to become better physicians. This being the object of the medical school itself, there should be no cross purposes between student organizations and the administration of the medical school, excepting those which inevitably arise, usually through misunderstanding between groups of persons; and these can almost always be obviated or compromised satisfactorily when both parties concerned take the time and trouble to explain to each other the reasons for their respective positions.

This is the place to point out what may be regarded as the greatest defect in the administrative relationship of medical schools with their students. There often seems to be a wide gap between students and the faculty, and particularly between the students and the administrative faculty, represented of course, in most instances by the Dean's office. I presume this is in part a tradition inherited from the growth of American educational systems in which teachers have habitually been more or less exalted by virtue of their position. In part, this gap is a natural result of contact between the mature and the less mature minds. Whatever its cause, and however desirable it may be in secondary schools and even in colleges, such a barrier between persons in the same profession is not desirable. And medical students are certainly, on the day of their acceptance by an approved medical school, as much a part of American medicine as is the physician sitting at the head of the banquet table on the occasion of the dinner customarily tendered him at the completion of fifty years of practice.

Students entering medical school are mature or are in early maturity. These students are sufficiently adult to accept responsibility and will do so readily and eagerly if the opportunity is given them. If they are treated as school boys, they will respond in a correspondingly irresponsible manner, and justifiably so. Therefore, the first step in securing the cooperation of medical students and organizations of medical students in any project or in the pursuance of any policy is to treat them as adults and invest them with the dignity which they rightly believe belongs to all members of our profession, and therefore to them. This is merely the old principle of authority and responsibility being indivisible. If one expects responsibility and cooperation from students and student organizations, the organization and its members must be treated with the same courtesy which is customarily extended to other groups within our profession.

The activities of the medical fraternity should never attempt to duplicate the work of the school and probably this rarely becomes an issue. There are sufficient fields for programs, supplementary to those of the school, and quite properly, which may exploited by group organizations of students such as fraternities, so that this need never become an issue.

Some of the ways in which fraternal organizations can cooperate with the medical school in the attainment of the objective of developing the student into the best possible physician are activities which may be discussed under the following nine groups:

SCHOLARSHIP: Students living in groups can stimulate each other to better scholarship by the establishment of study habits and by friendly rivalry among the individuals of a fraternity and of fraternities among themselves. While this latter is probably of minimal importance among medical students, there is an innate desire on the part of every person to do as well as the next one. Members of groups living together will unconsciously strive to be as nearly equal to the best man in the group as possible. This influence, while imponderable, is real.

Such activities of the group as tutoring the boys who are low in their classes, or in "organized" study activities, such as going over slides together, studying notes together, and the fraternity quiz sections are more tangible. These cannot be accomplished without group organization of some sort. Such activities are more frequently held and more easily accomplished by organizations such as fraternities than by chance grouping of students, which, at best, must be built anew each year, and at worst, are never formed.

EDUCATIONAL ACTIVITIES; LECTURES: With increasing frequency medical fraternities are providing the organization whereby students can gather in informal groups to hear a faculty member or an alumnus speak on subjects, which from their very nature, cannot be included in the medical curriculum; or on subjects which border on the medical but cannot be accorded a formal place in the curriculum; or on such "foreign" cultural subjects as the fancies of those concerned may dictate. Such supplementary instruction may prove of much value to the listener. Such subjects as fees, business arrangements, partnerships, the practice of specialists, attitudes towards organized medicine, attitudes toward

the community, how to select a location for beginning practice, how to select an internship, the question of postgraduate study, and a host of similar subjects, for one reason or another not entirely suited to formal instruction, can thus be discussed informally at the fraternity Fireside or Journal club.

PERSONAL INFLUENCE: Group organizations provide the most effective means for the student to make social contacts, in an informal way, with the older members of our profession. The influence of faculty members or of prominent physicians thus exercised over students is not measurable. Often such contacts will determine the attitude and the outlook of a student by reason of his blind loyalty to a stimulating and respected teacher or elder. The philosophy of this person cannot be transmitted through class room contacts alone, nor from short chance association, nor at medical society meetings after graduation.

It is not unknown for class work to be improved when some older man points out the value of a previously unpopular course to a group of students.

LIBRARY: Many fraternity chapters have libraries. These vary in extent. However, any library is better than none, and a few books or journals convenient to these students on a rainy night can be a very useful supplement to a University library, however complete this library may be. Whenever a small collection of books is made readily available to a group of students at any time, it cannot but be of value to these students and to the school of which they are a part. Some chapters subscribe to a few current journals and budget a definite amount of money for new books. Some receive alumni donations. Such books and journals made available at the living quarters of a group of students, release those in the library to others, and we all are well aware that reserve shelf books and reference books are only too difficult to secure during the session of classes, and since no library can provide enough copies to meet the peak demands, a fraternity library is to be regarded as an asset to the medical school as well as to the students of the school at large.

CHARACTER BUILDING: The fraternity can be a force in character building, if it is handled properly. It can be of indifferent value if ignored, or, perhaps, even harmful, if subjected to dictation. The doctor is notorious for his individualism. He submits resentfully and ungraciously to any show of dictation. So does his embryo—the medical student. Therefore, if the school is interested in the character of its students, responsibility should be placed on the organized groups for the wholesome operation of their homes. The fraternity house is, indeed, a home and the student should conduct himself accordingly. This probably is all that is ever required. Americans generally seem to regard absurd rules and laws as fair game, and stupid regulations invariably engender their contempt. Our medical students are characteristically American.

Civic problems, such as drinking, incurrence of debt, and bad associations, can best be handled by the chapter itself with advice occasionally from the medical school faculty members, but always best on the basis that the chapter house is the student's home and that he is expected to conduct himself in accordance with this concept only.

Social Contacts: Social contacts are very important for the physician. In the past, he has been looked to for leadership by his community. The only way he can continue to fulfill this duty and discharge his obligations fully is by the development of social technique, plus consideration of others. This polish of the man is attained, if at all, in part by the attrition of social contact. Group living concentrates this.

Chapter meetings are the first meetings composed exclusively of medical men which the student will attend. In these meetings, persons of previously very divergent interests and outlooks focus their thought on a common problem and bring to its solution, here in this first medical meeting, concepts influenced by common training. Young doctors learn how other doctors think. In the house meetings, causes are espoused and defended. Tempests rage in teapots—and the young doctor develops ability of expression, and the art of influencing others.

Recreational Facilities: Medical schools, unlike undergraduate schools, rarely provide recreational facilities or purely social outlets for their students. This need is supplied largely by the medical fraternities or other organizations of students. These organizations thus perform the valuable function of providing most of the organized social activity for the majority of the students in the school.

Athletics: In some schools there are athletics facilities for the students. Where these are found, it is invariable that they are organized about the existing groups—which are predominantly the medical fraternities.

Financial: Medical school expenses are high. Cooperative purchasing of food and shelter, which is essentially what occurs when groups live together in fraternity houses, usually results in these costs being less than those of room and board elsewhere. Often the entire fraternity cost is less than that of room and board alone outside of a fraternity group. Certain values accruing to the student living within a group—the use of books, participation in study groups, the benefits of constant medical conversation, to name a few—cannot be assayed. Could these be evaluated, it might be found that to live outside a good fraternity group is expensive indeed!

In conclusion, let me again emphasize that it is my belief that the administrators of medical schools could more fully utilize this one of their local resources, the organized student groups of their schools, to advance more fully the objectives of the school, by placing more responsibility on student organizations as such.

Preventive Medicine at the Yale University School of Medicine*

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FOREWORD.—Departments of Clinical Medicine and Departments of Public Health in our medical schools often develop their own concepts as to how one should deal with human disease—and the points of view may, on occasion, be so different from one another as to seem to the student to be almost diametrically opposed. This is in spite of the fact that both the clinician and the public health officer may be striving to teach the same subject, namely, preventive medicine. This term, preventive medicine, is less often attached to a clinical department of a medical school, than to a department of public health or hygiene. But actually, the student may find himself more exposed in the department of pediatrics to the type of preventive medicine which he may eventually apply, than anywhere else in the curriculum. It is on this principle, namely that of bridging the gap between clinical medicine and public health that the newly formed Section of Preventive Medicine has been initiated in the Yale School of Medicine; although there has been no implication in doing this that the gap between the doctor and the health officer is any wider in New Haven than elsewhere.

The newly formed Section of Preventive Medicine, which has recently come into being as a division of the Department of Internal Medicine at the Yale University School of Medicine, has been established on the principle that preventive medicine is part of clinical medicine. This calls for a broad use of the term clinical medicine. It implies that clinical medicine means more than the practice of the technics of diagnosis and therapeutics, for, although it deals primarily with the care of the sick individual, it is also concerned with the whole subject of disease in living people. In other words, clinical medicine is not a specialty; it is the mother of the clinical specialties, such as internal medicine and surgery, and their subdivisions.

As the aims of preventive medicine are (according to our definition) also concerned with the whole subject of disease in living people and particularly with the potentially sick individual, we find in this fact the justification for placing the department in the midst of the clinical activities of the school. This assignment is by no means accepted universally, for where preventive medicine belongs in the medical cosmos is a question of some dispute. In some schools, many schools perhaps, it has been aligned with the specialty (science) of public health; and, if it seemed desirable to develop its "nonclinical" aspects still further, it might even find a place among the social sciences. But before developing that theme, it may be well to enquire into what is actually meant by the term "pre-

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*From the Section of Preventive Medicine, Yale University School of Medicine.
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ventive medicine." Technically, preventive medicine is the science of preventing illness in man. This is a brave term—so brave perhaps that the element of propaganda in it has occasionally turned it into a catch word, useful on occasion for vague reference to the medicine of the future. But from the standpoint of a medical school the term preventive medicine means more than prophylaxis, just as clinical medicine means more than therapeutics, and one may take it for granted that preventive medicine is concerned with the study of conditions under which illness occurs in individuals (or groups of individuals) as well as with the technics of their control. The extent to which the activities of various Departments of Preventive Medicine should be divided between teaching and research, on the one hand, and practice, on the other, will naturally differ under different circumstances, depending in no small measure upon their accepted definition of the practice of preventive medicine. And this brings us to the first concrete question, which is: What does the practice of preventive medicine entail? Is it to be limited, for example, to efforts designed to keep a well person from becoming sick, or to keep a sick person from becoming worse? Does it include the prevention of a relapse from a chronic disease in an individual whose illness, such as pernicious anemia, tuberculosis, or rheumatic fever is for the moment quiescent? If the latter is the case, one would certainly have difficulty in distinguishing the practice of preventive medicine from that of internal medicine, or, for that matter, from good old-fashioned clinical medicine. And even if the practitioner of preventive medicine should be limited in his activities to preventing his well "patients" from acquiring illness, one would still have to cast about for reasons to show that this ideal is different from that of clinical medicine, and certainly from that of one of its important subdivisions—clinical pediatrics. It is, perhaps, only when one takes a leaf from some of the Chinese "text-books of medicine,"—to maintain that preventive medicine is that science or art which keeps you well and to maintain that a state of health is the positive thing, whereas disease is the negative thing—that one can find a difference between this type of preventive medicine and our clinical medicine. However, I believe that there is danger in doing this, for a separatist doctrine which tends to make preventive medicine into a special science does something to the parent science of clinical medicine. The offspring comes into being by a process of budding, and if the limb grew it would not be long before some new term would be necessary to redefine the parent science. Reluctantly perhaps one might be led then to apply the term curative medicine to the parent. Whether such a term would ever be used or not hardly matters, but its significance matters. It may not be necessary, for instance, to apply the terms adult medicine or somatic medicine in order to distinguish the internal medicine of today from the medicine which flourished before pediatrics or psychiatry came into being as specialties, but the underlying change which these offshoots have gradually wrought in the parent is of some import. For today, Departments of Internal Medicine have been forced to concern themselves largely with adult and somatic medicine; which is all right, but it would not be all right if Departments of Internal Medicine should in the future be forced to concern themselves with curative medicine alone.

This, then, is my reason for believing that the practice of preventive medicine belongs to clinical medicine and should follow the doctrine of clinical medicine. I do not believe, on the other hand, that that science which deals with care of the public health (often called "hygiene") belongs to clinical medicine. The reason that hygiene deserves to be an independent discipline or specialty, which also aims essentially to protect well people from disease, is that, although many of its methods have emanated from the clinic, its practice is not, or should not be, an integral part of the practice of internal medicine. Hygiene has had to develop special technics, quite different from those employed by students and practitioners of clinical medicine. The main difference lies in the fact that hygiene deals with the mass rather than with the individual. Consequently, its methods are usually applied on a large scale and can be better administered by specially designated individuals vested with governmental backing or other types of authority. As a result of this, the whole approach of the public health official and his point of view have come to differ from those of the clinician. The public health official tends to treat alike all members of certain groups, but the physician usually finds he must treat each individual differently.

Some of these differences were well described by the late Dr. Theobald Smith,[1] who prefaced the following remarks by saying: "the physician realizes that there will always be disease, either of one kind or another, whereas the public health worker has dreams of completely suppressing infectious diseases." Theobald Smith then went on to say:

"Public health doctrines are simple, but actual disease is very complex. Science seeks the simplest experimental conditions to determine truth, whereas practice inherits all the complications of nature. The experiment assumes uniformity, the physician accepts diversity in his material. Both views are true in part only and each needs the other as a corrective."

If this view is acceptable, the Yale University School of Medicine is fortunate, indeed, in having both a "scientific Department of Public Health," and a "clinical Division of Preventive Medicine" (no less scientific, we hope) so as to attack the problem from two sides.

As to the work of the new Section of Preventive Medicine, it is anticipated that its senior members will be full-time clinicians first of all with clinical duties in the Hospital wards and the Dispensary—duties which may also extend to the factory or home. In other words, they will work in close conjunction with other clinical members of the Department of Internal Medicine.

The investigative work of the Section of Preventive Medicine will also deal with clinical problems, but these will not be so much concerned with the behavior of a sick person as with the circumstances under which people become sick. This approach can best be described under the term "clinical epidemiology," one of the youngest of the clinical sciences,[2, 3] and it will be with this discipline that

1. Smith, T.: The influence of research in bringing into closer relationship the practice of medicine and public health activities. Am. J. M. Sci., 178, 741, 1929.
2. Francis, T., Jr.: Epidemic influenza. Studies in clinical epidemiology. Ann. Int. Med., 13, 915, 1939.
3. Paul, J. R.: Clinical epidemiology. J. Clin. Invest., 17, 539, 1938.

the work of the new division at Yale will be mainly concerned. Clinical epidemiology is a discipline concerned with the intimate ecology of disease. It is a discipline concerned with local circumstances (whether they are "functional" or "organic") under which human disease is prone to develop. From the orthodox science of epidemiology it differs both in its aim and its locale because the orthodox epidemiologist must of necessity deal dispassionately with large groups of people. It is, as Theobald Smith has said, the multiplication of observations and the use of statistics which give the orthodox epidemiologist his results. The clinical epidemiologist on the other hand must of necessity deal with small groups of people; people whom he knows well, and groups no larger than a family or small community; and, as such, his results may not be statistically significant. But this restriction of the size of the material to be analyzed rests on the fact that clinical judgment can not be applied wholesale without the risk of its being spread too thin to be effective. The clinical epidemiologist, then, is primarily anxious to collect details about his patients himself, and is not content to analyze data which are collected by other people and under circumstances of questionable accuracy. He starts out with a sick individual and cautiously branches out into the setting where that individual became sick: the home, the family, the institutional group, or the workshop. He is anxious to search for other members of the patient's family or community group who are actually ill or are on the threshold of illness. It is thus his aim to place his patient in the pattern of which he is a part, rather than to regard him as a lone sick man who has suddenly popped out of a healthy setting. It subsequently becomes his aim to bring his clinical judgment to bear on the situation, as well as on the patient.

Obviously, there is nothing new to the family doctor about this concept of medicine. It is the heart and soul of family practice, particularly pediatric practice, and probably has been as long as family practice has existed, but now that the emphasis for most full time Departments of Medicine has shifted away from the home and into the hospital, familial epidemiology or domiciliary epidemiology will be practiced only if we take thought about it. For it can not be practiced in a hospital if one goes no farther than a perusal of that brief notation in the patient's history known as the "family history"; and no farther than a report of "home conditions" from the social service worker. Clinical investigation and clinical procedures in this field can, nevertheless, be carried out successfully by full-time workers in a hospital or dispensary. To mention a few well-known examples which have emanated from full-time "clinical departments" one can cite the studies of Dr. E. L. Opie and his co-workers, from the Henry Phipps Institute in Philadelphia, on the spread of tuberculosis through families;[4] and, in New York City, the work of Dr. A. F. Coburn, from the Department of Practice of Medicine at the College of Physicians and Surgeons, on the epidemiological aspects of rheumatic fever within institutions;[5] and the studies of Dr.

4. Opie, E. L., and McPhedran, F. M.: The spread of tuberculosis within families. J. Am. M. Asso., 87, 1549, 1926.

5. Coburn, A. F., and Pauli, R. H.: Studies on the immune response of the rheumatic subject and its relationship to activity of the rheumatic process. J. Clin. Invest., 14, 769, 1935, and many earlier and subsequent papers by Coburn.

T. Francis, Jr., from the Rockefeller Foundation, on the clinical epidemiology of influenza.[2]

In the new division at Yale, relatively little in the way of formal teaching is planned at first, and there will be no specific courses on preventive medicine, as such. Fortunately, the Department of Public Health makes provision for the deficiencies in this respect. It is, however, our hope that if the work in the clinical Section of Preventive Medicine amounts to anything, our medical students may become aware of this fact through their contacts with its staff members in the wards and in the clinics of the Hospital and Dispensary. In other words, no effort will be made to force the idea of preventive medicine on students at a time when they know little about either the clinical picture or the significance of the diseases that they might be called upon "to prevent."

A course in Clinical Epidemiology will, however, be offered as one of the specific teaching activities. In it methods of immunization as used by practicing physicians will be included, but any dogmatic exposition of rules for applying methods of disease prevention will be approached with caution. The intelligent application of prophylactic knowledge, though apparently simple in a few cases (as in diseases spread by filth and vermin or diseases arising under grossly defective living or working conditions), is not so simple in most instances. In fact, more "clinical judgment" would seem to be required in outlining certain prophylactic programs than in directing therapeutic programs. It is my belief that just as few medical students are able to bring experienced clinical judgment to bear on therapeutic programs until they have served an internship and have thus had the responsibility of making decisions about their own patients, so also few students (or teachers, for that matter) are in a position to practice or preach "disease prevention" until they are faced with similar responsibilities. Let us suppose, for instance, that the prevention of death (at all costs) is under discussion. The prevention of death in a sick or well individual is an ideal towards which the clinician strives, today apparently harder than ever. It is the ideal towards which the social community expects him to exert his best efforts. But should the practitioner of preventive medicine subscribe to this too? For, if one is successful in prolonging the life of an aged, infirm, or physically unfit individual, does one not at some point begin to increase, instead of decrease, the total amount of "preventable illness" in that individual's life? And thus the would-be practitioner of preventive medicine may find to his dismay that he is engaged in a paradoxical form of activity. These questions are too difficult for most of us, although they concern the very foundations upon which preventive medicine rests. In fact, they indicate that there is a strong philosophical aspect to the subject upon which the practice of preventive medicine must rest. Few subjects deserve more study—or should be approached by the teacher with more humility.

PROGRAM

FOR THE

FIFTY-SECOND ANNUAL MEETING

OF THE

ASSOCIATION *of* AMERICAN MEDICAL COLLEGES

OCTOBER 27, 28 AND 29, 1941

RICHMOND, VIRGINIA

HEADQUARTERS: HOTEL JEFFERSON
HOST: MEDICAL COLLEGE OF VIRGINIA

MONDAY: OCTOBER 27

9:30 A. M.

The Place of the Medical Colleges in the National Defense Program.

COLONEL GEORGE F. LULL, *Chief,*
Personnel Division, U. S. Army Medical Corps.

A Course in Industrial Medicine for Medical Students.

DR. BENJAMIN F. JONES, *Passed Assistant Surgeon,*
U. S. Public Health Service.

Physiological Problems Involved in Aviation Medicine.

DR. ALVAN L. BARACH, *Assistant Professor of Clinical Medicine,*
Columbia University College of Physicians and Surgeons.

A Course in Industrial Medicine for Medical Students.

CAPTAIN CHARLES S. STEPHENSON or
LIEUTENANT OTTO L. BURTON,
U. S. Navy Medical Corps.

Newer Phases of Psychiatry in Relation to Army Problems.

DR. WINFRED OVERHOLSER, *Chairman,*
Committee on Neuropsychiatry, National Research Council.

12 Noon:

Address of the President of the Association of American Medical Colleges.

DR. C. W. M. POYNTER, *Dean,*
College of Medicine, University of Nebraska.

TUESDAY: OCTOBER 28

9:30 A. M.

Four Academic Years in Three Calendar Years.

DR. VICTOR JOHNSON, *Dean of Students,*
University of Chicago School of Medicine.

DR. WILBERT C. DAVISON, *Dean,*
Duke University School of Medicine.

Discussion opened by:

DR. O. W. HYMAN, *Dean,*
University of Tennessee College of Medicine.

Teaching of Pathology: Criticisms and Suggestions.

DR. FRANK L. APPERLY, *Professor of Pathology,*
Medical College of Virginia.

Integration of Surgery and Anesthesia.

DR. EVERETT IDRIS EVANS, *Instructor in Pharmacology and Surgery,*
Medical College of Virginia.

Travelogue of Medical History in Virginia.

DR. WYNDHAM B. BLANTON, *Professor of Clinical Medicine,*
Medical College of Virginia.

WEDNESDAY: OCTOBER 29

9:30 A. M.

Instruction in Industrial Medicine for Medical Students.

DR. T. LYLE HAZLETT, *Professor of Industrial Hygiene,*
University of Pittsburgh School of Medicine and
Medical Director Westinghouse Company.

Teaching of Industrial Health for Medical Students.

DR. FRED J. WAMPLER, *Professor of Preventive Medicine and Public Health,*
Medical College of Virginia.

Interest Patterns and Achievement in Medical Schools.

DR. CARLYLE F. JACOBSEN, *Professor of Medical Psychology,*
Washington University School of Medicine.

Teaching in Tuberculosis for Medical Students.

DR. E. W. HAYES, *Chairman,*
Committee on Undergraduate Education in Medical Schools of the American College of Chest Physicians.

Discussion opened by:

DR. DEAN COLE, *Associate in Medicine,*
Medical College of Virginia.

Experiment Design and Judgment of Evidence.

DR. EVERETT C. ALBRITTON, *Professor of Physiology,*
George Washington University School of Medicine.

JOURNAL
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Selective Service and Training Act

Dr. Willard C Rappleye, chairman of the Committee on Preparedness of the Association of American Medical Colleges, has given notice that the Selective Service Act has been amended to give indefinite deferment to those men who are placed in Class II-B.

Paragraph 352 of the regulations has been amended by the addition of:

"b. In Class II-B shall be placed any registrant found to be a "necessary man" in any industry, business, employment, agricultural pursuit, governmental service, or any other service or endeavor, or in training or preparation therefor, the maintenance of which is essential to the national health, safety, or interest in the sense that a serious interruption or delay in such activity is likely to impede the national defense program."

Paragraph 353 of the regulations has been amended as follows:

"b. Class II-B deferments shall not be limited as to the period during which they shall be effective. The case of a registrant classified in Class II-B may be reopened and his classification considered anew in the same manner and for the same reasons as any other classification. (See Section XXX)."

National Headquarters of Selective Service has asked local boards to review all questionnaires of registrants now classified in Class II-A for the purpose of determining whether they should be continued in that classification or should be placed in Class II-B pursuant to the provisions of paragraph 352 (b) of the amended Regulation.

When medical students come up for reclassification it should be requested that they be placed in Class II-B.

Wanted

Two young internists, for full time service: Salary, about $2,400. Must have had training equivalent to a three year residency in internal medicine. Instructor in pediatrics, with training equivalent to two year residency, Salary: about $2,000.

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The Internship

For several years the Association of American Medical Colleges has been contacting the hospitals approved for intern training in an endeavor to elicit their support of a movement designed to remove one of the perplexing problems connected with the internship; viz., to calm the perturbed senior student who is wondering whether and when he will secure an internship. After consultation with hospital directors, it was decided to poll the hospitals as to whether they would agree on announcing their intern appointments on a given date. It was agreed that November 15 would be a satisfactory date. Applications for internships could be made prior to this date; selections of interns by the hospitals could be made at any time, but announcement of selection was not to be made to any applicant until November 15. Thus, every student would know that on that date he would receive word as to whether he had been selected by the hospital of his first choice, or some other hospital to which he may have applied. There would not be any unrest, no scramble, no let up in class work. If he did not receive an appointment, he would have ample time to look around for another internship elsewhere.

It was the opinion of the men who discussed this matter that it could be

made to work if the hospitals would cooperate 100 per cent. It would not do for some hospitals to join in the movement; *all* hospitals must cooperate.

Letters announcing the plan were sent to all hospitals approved for intern training by the American Medical Association. The replies received were astonishingly favorable. The hospitals seemed to be ready for just that sort of a plan. In a way, it simplified selection, obviated shopping for interns and internships; calmed the student. In short, it was said by many hospitals to be a step in the right direction. Many hospitals suggested that the Association of American Medical Colleges set up a central placement bureau which would supply hospitals with interns and students with internships. As a matter of fact, such an agency has been in existence under the direction of this Association for a number of years. It has functioned well; true, in a small way, but the results show clearly that this service can be extended to meet the suggestion made by the hospitals.

Encouraged by the results of the first year's work in the effort to set up a universal announcement date, the Association continued its efforts the following year and again this year. Now it is possible to attempt to pass judgment on the success of the plan. First, virtually all hospitals are agreed that the plan is good. Second, they are agreed that it cannot be made to work unless *all* hospitals cooperate. Third, many complain that some hospitals which agreed to cooperate "jumped the gun" by announcing to the selectees that they have been accepted for an internship. This left the smaller hospitals "out on a limb." They had agreed to cooperate —and did cooperate only to find that the men they had selected had already accepted an appointment from some other hospital, having been informed of their selection by that hospital long before the date agreed on, November 15. Invariably the hospitals falling into this group were large hospitals; "teaching" hospitals; hospitals in the larger cities, especially one large city was named. Thus, in summary, it can be said that the plan suggested is a good one; that it can be made to work but only if all hospitals cooperate—or if the Association of American Medical Colleges will assume the responsibility, and do the work, of filling acceptable internships. Since the Student Register maintained by the Association contains the scholastic history of every medical student (about 23,000 cards), it is possible to give the hospitals exact information as to the standing of the student and by means of the blanks with which the Intern Placement Bureau functions, all information desired by both hospital and student can be supplied. Thus, it is easily possible to bring student and hospital together and, probably, with greater satisfaction for both than is now the case. At any rate, it is worth trying out this plan as suggested by many hospitals.

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Oglethorpe University Medical School

"The great need for doctors in the new army in the present emergency as well as the steady decrease in the number of physicians in the country at large and the especially vital needs of medical service in Georgia to which the Governor of the State has recently directed the attention of the Commonwealth" have all united in bringing the Board of Oglethorpe University, Oglethorpe University, Georgia, to open a College of Medicine which "will be a standard school, fully accredited under the laws and by the authorities of the State of Georgia. While it is being founded especially as a Georgia school for Georgia physicians, it will accept applications for admission from all parts of the world."

Apparently, if this announcement, made in a special folder by Oglethorpe University, is interpreted correctly, the Board of that university has decided that the authorities of the State of Georgia alone will be the acceptable accrediting agency for this medical school; that no outside agency will be asked or permitted to have any voice in the matter. If that is the case, the

residents of Georgia who may graduate from this school will not have any difficulty in being licensed to practice in Georgia nor will any other graduate fail of being licensed in Georgia. But what of those seeking licensure in other states which have not given approval to that medical school? What will it benefit a non-resident of Georgia to graduate from this school if he desires licensure in some state other than Georgia? The preliminary announcement states specifically that "applications for admission from all parts of the world" will be accepted. It hardly seems possible that due consideration has been given to this most important matter by the authorities of the Board of Oglethorpe University.

Dr. John L. Jacobs, formerly associate professor of pathology and bacteriology, Tufts College Medical School, has been appointed vice president of the University in charge of the scientific work of the institution.

It is stated by the university that the expenses of the student will be moderate. The total charge for tuition, board and room rent, and all college fees, such as matriculation, laboratories, library, infirmary, etc., has been set at $927 per year of approximately nine months. A tuition fee of $600 per academic year will be made to students not boarding and rooming on the campus. There will be no other special charges or fees. Women will be admitted. Information is not given as to entrance requirements and courses except that "the courses will be those usually taught in standard medical colleges." The work of the first two years will be done on the campus. As for the clinical years, it is stated: "Near the University is the Lawson General Hospital and U. S. Veteran's Hospital No. 48. Unusually fine clinical facilities will be available to third and fourth year men at Grady Hospital (Atlanta)." Oglethorpe University is a suburb of Atlanta.

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Graduates for 1941

According to the reports received from the medical schools situated in the U. S. (67), 5,060 persons were awarded the degree of M. D. during the academic year 1940-1941—ending July 1, 1941. This includes those students who are required by their alma mater to serve a one year internship before receiving the M. D., but does not include the students of these same colleges who completed the senior year in 1941 but did not receive the M. D. degree. This number is somewhat smaller than it was in 1940—by about 30. Further analysis of the 1941 graduates will be published in the November issue of this *Journal.*

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Medical Education and Research in Illinois: Medical Center in Chicago

A Medical Center District Act was passed recently by the Illinois legislature and approved by the Governor.

The measure provides for creation of a Medical Center District on Chicago's West Side. The district will be under the jurisdiction of a Commission of five members, one each appointed by the governor, mayor of Chicago, president of the Cook County Board of Commissioners, president of the Chicago Park District, and the Board of Trustees of the University of Illinois.

Under the powers of eminent domain granted to it, the Commission may acquire property and erect buildings for medical purposes, for the use of persons connected with medical institutions, or for use of dealers in medical accessories. The Commission may also set apart any part of the district as a park and is empowered "to so improve and manage such district as to provide conditions most favorable for the special care and treatment of the sick and injured and for the study of disease."

Others powers of the Commission include the authority to "classify, regulate and restrict the location and construction of buildings within such district . . . . . prohibit uses of buildings and structures incompatible with the character of an educational and hospital

district to the end that adequate light, air, quietness and safety from fire and from the communication of diseases and other dangers may be secured."

In granting to the Commission power to purchase or otherwise acquire property within the district, the bill specifically exempts "medical institutions or allied educational institutions, hospitals, dispensaries, clinics, churches, or real property which is used for dormitories, or homes for the nurses, doctors, students, instructors, or officers of institutions located in the district or which is used for offices or recreational purposes in connection with the institutions."

To obtain funds for the improvement and development of the Medical Center District as provided therein, the bill authorizes the Commission to borrow money from the Reconstruction Finance Corporation or from private corporations or persons and to issue bonds to cover such indebtedness, payment to be made from revenues derived from buildings erected.

Authorities estimate that approximately 60 million dollars will eventually be expended by the Commission to clear out deteriorated sections and replace them with modern buildings or park areas. It is expected that expansion of Cook County Hospital to enable it to more adequately meet the needs of the indigent sick and convalescent will be facilitated by the creation of the Medical Center District. Other medical institutions in the district, including Presbyterian Hospital, may now carry forward development plans with the assurance that public authorities will create an environment conducive to an enlarged program of hospital service and medical teaching and research.

Presbyterian Hospital-University of Illinois

Under an agreement between Presbyterian Hospital and the Trustees of the University of Illinois, the hospital has taken over the Rush Medical College buildings and equipment under a 25-year lease and made these, together with the clinical teaching and research facilities of the hospital, available to the University.

Through an agreement with the University of Chicago, Rush buildings and equipment, acquired by the University in 1924, have been returned to the Trustees of Rush Medical College, who are also to retain the Rush Charter, taken out in 1837, use of the Rush name in connection with educational projects, and control of certain trust funds. Under a 25-year lease, Presbyterian Hospital has assumed the maintenance of the Rush buildings and equipment for educational purposes.

Classes will be conducted during the coming year to permit Rush students already enrolled to complete their course, but no new students will be enrolled. Although Rush Medical College as such will cease to exist, the agreement between Presbyterian Hospital and the University of Illinois provides that the members of the Rush Faculty who are also members of the Medical Staff of the hospital are to be designated as "Rush Professors" on the University Faculty of Medicine. In this way the name and traditions of the first medical school established in Illinois and the Northwest will be perpetuated.

Central Free Dispensary, which has been maintained in the Nicholas Senn building as an outpatient and clinical teaching center, affiliated with both the college and the hospital, will be operated and maintained by the hospital as its own outpatient department.

College News

University of Minnesota
Medical School

Dr. Clarence M. Jackson, Professor and Head of the Department of Anatomy, retired at the close of the school year and has been appointed Professor Emeritus in the Department of Anatomy. A committee consisting of the following professors has been appointed to administer the department for the coming year: Dr. Edward A. Boyden, chairman, Dr. Andrew T. Rasmussen and Dr. Hal Downey.

The following members of the faculty retired at the close of the school year: Dr. J. Frank Corbett and Dr. Harry P. Ritchie as clinical professor of surgery; Dr. Walter R. Ramsey as clinical associate professor of pediatrics; Dr. Orianna McDaniel as clinical associate professor of preventive medicine and public health; and Dr. Anton G. Wethall as clinical assistant professor of urology.

Dr. Horace Newhart, professor of otolaryngology and Director of the division of otology, rhinology and laryngology; and Dr. Charles A. Reed, associate professor of orthopedic surgery, resigned from the medical faculty, after many years of service, to devote their time to private practice.

Promotions: Dr. C. D. Creevy to professor of surgery, chief of the division of urology and assistant dean of the Medical School; Dr. James A. Johnson to clinical professor of surgery; Dr. Lawrence R. Boies, clinical associate professor of ophthalmology and otolaryngology, has been appointed Director of the Division of Otolaryngology. Dr. Abe B. Baker, associate professor of nervous and mental diseases and of pathology; Dr. John R. Paine, associate professor of surgery; and Dr. Wesley W. Spink, associate professor of medicine; Dr. Archibald H. Beard, clinical associate professor of medicine; Dr. Edward T. Evans, clinical associate professor of surgery; Dr. Royal C. Gray, clinical associate professor of nervous and mental diseases; Dr. Nathaniel H. Lufkin, clinical associate professor of pathology; Dr. Kenneth A. Phelps, clinical associate professor of otolaryngology; Dr. Morse J. Shapiro and Dr. Samuel A. Weisman, clinical associate professor of medicine. Dr. Lillian Cottrell, assistant professor of nervous and mental diseases; and Dr. Charles E. McLennan, assistant professor of obstetrics and gynecology; Dr. John M. Adams, clinical assistant professor of pediatrics; Dr. Frank C. Andrus and Dr. George K. Higgins, clinical assistant professor of pathology; Dr. Ragnvald S. Ylvisaker, Dr. Joseph F. Borg and Dr. Johannes K. Moen, clinical assistant professor of medicine; Dr. John J. Hochfilzer, clinical assistant professor of otolaryngology; Dr. Ernest L. Meland, clinical assistant professor of urology; Dr. Russell W. Morse and Dr. Harold O. Peterson, clinical assistant professor of radiology; Dr. Wallace P. Ritchie, clinical assistant professor of surgery.

Dr. Chester A. Stewart resigned his appointment as clinical professor of pediatrics to accept an appointment as Professor and Head of Pediatrics at the Louisiana State University School of Medicine.

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Stanford University
School of Medicine

In cooperation with the San Francisco Department of Public Health and the San Francisco Hospital, Stanford will conduct a postgraduate medical course for practicing physicians from September 8 to 12 (Incl.), 1941. Each physician may take one morning and one afternoon course, or a full day course and should attend evening meetings. The registration fee will be $25.

An additional fee of $10 will cover cost of materials used in the course on surgical anatomy and operative technic and in the course on ophthalmology. Further information as to courses may be obtained by writing to the Dean of the Medical School.

Dr. Cecil K. Drinker, of Harvard University, has been selected as the guest speaker to give the twenty-eighth series of Lane Medical Lectures.

The Lane Medical Lectures were founded in 1896 by Dr. Levi Cooper Lane. These lectures are given biennially on medical subjects and the lecturer is chosen from among the outstanding specialists in the medical field concerned.

Dr. Cecil K. Drinker is professor of physiology and Dean of the School of Public Health of Harvard University, Boston. He will give a series of five lectures on October 6, 10, 13, 17 and 20, 1941, on the general subject of the lymphatic system.

James P. Baumberger, Sc.D., professor of physiology, has been granted leave of absence to serve from April 1 to December 31 as visiting professor in cytology at Washington University School of Medicine and research associate in the Barnard Free Skin and Cancer Hospital, St. Louis.

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University of Oregon
Medical School

In recognition of his 30 years' service to the University of Oregon medical school, 225 members of the school faculty honored Dean Richard B. Dillehunt at a dinner at Portland's University club on July 10.

Dr. Dillehunt went to Portland in 1911, fresh out of Rush medical college. In 1912 he became assistant dean and in 1920, upon the death of Dr. K. A. J. Mackenzie, he was made dean.

"Mackenzie's dream" was the building of a medical center atop Marquam hill, high above the city of Portland on the western heights. At the time of his death, one building stood on the hill. The school was inaccessible and there were many cynics who thought this location of the school was highly impractical.

Under Dean Dillehunt's 21-year administration "Mackenzie's dream" has bloomed into a $3,000,000 reality. Erected on the campus have been Doernbecher children's hospital, Multnomah hospital, the outpatient clinic, the new $300,000 library, made possible by an initial gift of Dr. John E. Weeks, a new state tuberculosis hospital and clinic and additional class and laboratory space. Nearby is the U. S. Veterans hospital, a further addition to a complete medical center.

Feature of the banquet was the unveiling of a portrait of Dean Dillehunt, painted by Sydney Bell, Portland artist. Dean Dillehunt sat for the portrait at the behest of the faculty members and the painting will be placed in a panel in the faculty room of the library.

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Cornell University
Medical College

Dr. William Dock, professor of pathology at Stanford University School of Medicine, and pathologist to the Stanford University Hospitals in San Francisco, has been appointed professor of pathology at Cornell and pathologist to New York Hospital. Dr. David P. Barr, Busch professor of medicine at Washington University School of Medicine and physician in chief of Barnes Hospital, St. Louis, has been appointed professor of medicine and physician in chief to New York Hospital. He succeeds Dr. Eugene F. Du Bois, who has been made professor of physiology and head of the department of physiology and biophysics.

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University of California
Medical School

Promotions: Dr. Frederic C. Bost, Dr. Howard A. Brown and Dr. Keene C. Haldeman, associate clinical professor of orthopedic surgery; Dr. C.

Allen Dickey and Dr. David O. Harrington, assistant clinical professor of ophthalmology; Dr. John M. Graves and Dr. F. G. Novy, Jr., assistant clinical professor of dermatology; Dr. David M. Greenberg, professor of biochemistry; Dr. Chas. Gurchot, assistant professor of pharmacology; Dr. Daniel G. Morton, associate professor and Dr. Allan Palmer, assistant professor of obstetrics and gynecology; Dr. Clayton D. Mote, Dr. Chas. A. Noble, Jr. and Dr. Harold H. Rosenblum, assistant clinical professor of medicine; Dr. Eric Ogden, associate professor of physiology; Dr. Henry W. Weyrauch, Jr., assistant clinical professor of neurology; Dr. Sidney J. Shipman, clinical professor of medicine.

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University of Tennessee
College of Medicine

A contract has been let for a new building which will be called The Psychiatric Hospital and Diagnostic Clinic. The building and equipment are under contract for $490,000. Four floors of the building will be devoted to the outpatient department. The remaining three floors will be a Psychiatric Hospital. The Psychiatric Hospital will be a branch of the Western State Hospital of Tennessee. All patients committed to the Western State Hospital will be sent to the Psychiatric Hospital in Memphis for examination and diagnosis. After classification, a small fraction of cases will be retained for treatment in the Psychiatric Hospital. The majority of cases will be forwarded to the Western State Hospital for treatment.

The service of the Psychiatric Hospital will be integrated with that of the John Gaston Hospital (the general hospital of the City of Memphis) and students of the medical college will be rotated through the service as through all other hospital services.

The consultation service of the General Hospital will be available to the Psychiatric Hospital on all cases. Any psychiatric cases requiring major surgical service or other services which cannot be rendered at the Western State Hospital will be given the required service at the John Gaston Hospital.

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Wayne University
College of Medicine

Creation of an extensive Wayne University medical center for Detroit has come a step nearer realization with the approval by Common Council of a proposal for turning over the Memorial Park riverside grounds, near Burns Drive, to the Detroit Board of Education, to form a part of the project area. Dean Edgar H. Norris of the College of Medicine made the proposal after interested Detroit citizens had studied possible sites, and had selected the park and its adjoining territory as most desirable.

Action by the Council consisted in leasing the park property to the Board under terms of a 30-year renewable lease. Before the request for this action was made, an option had been obtained on 14½ acres adjoining the park so that an ample campus of approximately 40 acres might be assured.

The project has been given the support of the Wayne County Medical Society, Advisory Council to the faculty of the College, and the Board of Trustees of the Wayne University Foundation. Wendell W. Anderson, president of the Bundy Tubing Company and son of one of the original Ford partners, has been one of the most active workers for its furtherance.

Plans for financing 16 buildings projected for the site call for the use of gifts to be received by the Wayne University Foundation from private donors and foundations. It is believed that construction of one hospital unit and one new college building will get under way soon.

The Wayne University Foundation was established two years ago to act as trustee for grants and gifts to the University and to promote scientific investigation.

Plans for the center include the construction of a number of units for medical education and research; a large, modern hospital with units for women, children, and psychopathic patients; and dormitories for the staff.

Dr. Ivan B. Taylor, from the staff of the University of Pennsylvania, was appointed professor of anesthesia. He will work in the Division of Surgery. Dr. Taylor has been in charge of anesthesia at the University of Pennsylvania hospital since 1939.

He developed a punch card system for recording anesthesia data which is distributed by the American Society of Anesthetists and is in use at many hospitals. Announcement has been made of the establishment of the Wayne University Brain Disease Registry in cooperation with seventeen hospitals in the Detroit metropolitan area. The center will be under the auspices of the department of pathology and under the direction of Dr. Gabriel Steiner, professor of neurology and neuropathology. It is planned to make the facilities of the brain registry available to physicians and other scientists without charge. Its services will include storage of tissue specimens for examination and study, reports and statistics on the examined cases, teaching and demonstration facilities, publications and neuropathologic research.

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University of Georgia
School of Medicine

The Governor and a committee of the Board of Regents of the University have authorized the expenditure of $250,000 over a four year period for expansion of the facilities of the School of Medicine. About one-half the appropriation will provide for enlargement of the physical plant and one half for equipment, personnel and clinical facilities. Fifty free beds in the University Hospital (owned and financed by the city of Augusta but operated by the University through the medical school) have been subsidized for teaching. In addition, the Wilhenford Hospital, which until recently was a private hospital for women and children located on University property in return for teaching privileges, has been converted into a tuberculosis hospital with forty or fifty beds, practically all of them free beds for teaching.

The students class (first year) will be increased from 48 to 75 with the intention to adhere to the policy of not accepting non-resident students in any of the four classes. It is planned that all new building operations (three existing buildings will be enlarged) will be ready for occupancy by October 1st.

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University of Rochester
School of Medicine

Dr. W. R. Bloor, assistant dean, has been appointed a member of the Scientific Advisory Committee of the International Cancer Research Foundation.

Promotions: Dr. Samuel H. Bassett, associate professor of medicine; Dr. Alfred M. Weld, assistant professor of medicine and physiology; Dr. Howard B. Slavin, to assistant professor of medicine and bacteriology; Dr. Shirley B. Snow, to assistant professor of obstetrics and gynecology; Dr. Norris G. Orchard and Dr. John A. Lichty, to assistant professor of pediatrics.

The University of Rochester will receive $1,279,000 for its division of urology from the estate of Dr. Henry C. Buswell of Buffalo.

The Rockefeller Foundation has given a grant of $90,000 to be used as a general or fluid research fund. The grant extends over a three year period with no more than $30,000 available in any one year.

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University of Arkansas
School of Medicine

Dr. S. P. Cromer, former dean, has been succeeded by Dr. Byron L. Robinson, professor and head of the department of anatomy. Dr. S. C. Fulmer remains as assistant dean. Mr. Walter J. Grolton, superintendent of the St.

Louis City Hospital for the past eight years, has been elected to the superintendency of the University Hospital. He will also be business manager for the combined hospital and medical school.

◆ ◆

University of Illinois
College of Medicine

The new Neuropsychiatric Institute which was completed and furnished during the past year at a cost of about $1,500,000 will be opened this fall. It consists of two divisions: The Division of Neurology and Neurological Surgery (with 54 beds and research laboratories) under the direction of Doctor Eric Oldberg, Professor and Head of the same department in the University; and the Division of Psychiatry (with 98 beds and well equipped laboratories for research in neurophysiology) under the direction of Doctor Francis J. Gerty, newly appointed Professor and Head of the same department in the University. The Institute will be operated under a joint agreement between the State Department of Public Welfare and the University, with Doctors Gerty and Oldberg representing the University and Doctor Harry R. Hoffman, State Alienist, representing the Department. The University assumes responsibility for the direction of patient care, teaching, and research. The State Alienist is the custodial officer for all committed cases and executive officer in the Institute for the Department.

On July 1 under an act of the legislature the general hospital of the Research and Educational group, consisting of 348 beds, and the Illinois Surgical Institute for Children, with 119 beds, were transferred from the State Department of Public Welfare to the University of Illinois. This transfer was brought about in order to eliminate dual administration and thus provide more efficient management. The Division of Physically Handicapped Children which is supported by funds appropriated by the Children's Bureau of the Federal Department of Labor, formerly administered by the Department of Public Welfare, was also transferred to the University. Funds were appropriated to the University for extensive physical improvements in the hospital and dispensary and for the procurement of the remaining privately owned land in the block containing the colleges and hospital and institute buildings. The present capital investment totals approximately $8,000,000.

Recent legislation provides enabling authority for the Illinois Eye and Ear Infirmary (an institution with a dispensary of 200 beds, now operated by the Department of Public Welfare) to enter into an affiliation with the University of Illinois. The affiliation will chiefly provide for the development of graduate educational and research programs. It is planned eventually to move the Infirmary to the Chicago Campus of the University, to become the Eye and Ear Institute of the Medical Center. This legislation is basic preparation for further integration of the several public welfare and University of Illinois institutions in Chicago in a comprehensive program of medical education and research.

The College of Pharmacy has moved to new offices and laboratories in the medical and dental units of the Chicago Colleges during the past year. The building which the college vacated containing approximately 26,410 square feet of space is being remodeled for use as a social center for students, faculty and alumni and will contain a gymnasium, club rooms, cafeteria and grill. This building will be opened at the beginning of the fall semester.

Other University legislation affecting the Chicago Colleges includes the setting up of a new retirement payment system based on equal contributions from University employees and the State. Another legislative act transfers the responsibility for the control of Civil Service employees of the University from the State Civil Service Commission to the Board of Trustees of the University who shall be responsible for all Civil

Service classifications, examination, etc. for the non-teaching civil service staff of the University.

The University of Illinois has accepted a grant of $2,000 from Parke, Davis & Company. The grant was made to support, for the next six months, research on the pathogenesis and therapy of experimental renal hypertension being conducted in the departments of physiology and physiological chemistry of the College of Medicine by Dr. George E. Wakerlin and Dr. C. A. Johnson.

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University of Missouri
School of Medicine

The enrolment for the 1941-1942 freshman class will be increased by 10 per cent to aid in the national emergency.

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Louisiana State University
School of Medicine

The senior class began its studies June 16th instead of September 8th. The course is being conducted with the regular staff and is fully up to standard.

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University of Chicago
Medical School

For the past twelve months or more a curriculum committee has been engaged in a study looking to a rather extensive fundamental revision of the curriculum. No report is contemplated in the immediate future.

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Temple University
School of Medicine

The classes of 1940 and 1941 presented to the school at the June commencement a life size portrait of Dr. Jesse O. Arnold, who recently became professor emeritus of obstetrics. These were the last two classes taught by Dr. Arnold. The portrait, painted by Lazar Raditz of New York and Philadelphia, was accepted by Dr. William N. Parkinson, dean of the school, and was placed in the library.

George Washington University
School of Medicine

June 9th, twenty-nine members of the junior class entered on their senior work and will graduate in February, 1942. It is believed that this group will receive an intensive course of instruction and receive more individual supervision than is the case in the regular course.

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Medical College of Virginia

A symposium on industrial health will be held September 11 and 12, 1941. Subjects discussed will include eye injuries, respiratory diseases, including tuberculosis, dermatoses, air conditioning, surgical conditions and industrial health generally. A fee will not be charged for the course. Further information may be obtained by writing to Dr. Fred J. Wampler, professor of preventive medicine, in the College.

Dr. John M. Meredith has been appointed associate professor of neurological surgery.

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Harvard Medical School

Promotions: Donald L. Augustine, Sc.D., associate professor of comparative pathology and tropical medicine.

Dr. William L. Aycock, associate professor of preventive medicine and hygiene.

Dr. Harry C. Solomon, clinical professor of psychiatry; Dr. Charles G. Mixter, clinical professor of surgery; Dr. Robert S. Morison, assistant professor of anatomy; Dr. Thomas D. Jones, assistant professor of medicine; Dr. Aubrey O. Hampton, assistant professor of roentgenology; Dr. Arthur T. Hertig, assistant professor of pathology; Dr. Jacob Fine, assistant professor of surgery.

The late Robert Stanley Forsythe, Chicago, bequeathed $100,000 to Harvard for research in the cause and cure of asthma, as a memorial to his deceased wife, who suffered from asthma throughout her life. The grant will be known as the Nell Lucas Forsythe Memorial Fund, newspapers reported.

University of Colorado
School of Medicine

Dr. Maurice H. Rees, dean, has been appointed chairman of a Committee on Inclusive Rates under the Council on Administrative Practice of the American Hospital Association.

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University of Virginia
Medical Department

Dr. Claude C. Coleman, clinical professor of neurological surgery since 1937, has resigned. His successor will be Dr. William Gayle Crutchfield, Richmond, who has been associate clinical professor since 1937.

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Washington University
School of Medicine

Dr. Harry L. Alexander, associate professor of clinical medicine has been appointed professor of clinical medicine and acting head of the department of internal medicine. He succeeds Dr. David P. Barr, who resigned to accept an appointment at Corhell University Medical College in New York in 1887.

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Hahnemann Medical College

Women will be admitted to Hahnemann next session for the first time. This step was taken as an aid to the national emergency because of increasing demands by the military forces.

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New York Medical College

The separate departments of histology, embryology, neuroanatomy and gross anatomy were united in one Department of Anatomy under the Chairmanship of Dr. C. E. Tharaldsen. The Department to be known as the William Waldo Blackman Department of Anatomy.

Dr. L. Corsan Reid was transferred from the Department of Pathology to the Department of Physiology.

Dr. Stephen P. Jewett was appointed Head of the newly created Department of Psychiatry; and Dr. Thomas I. Hoen was appointed Head of the Department of Neurology and Neurosurgery.

Dr. Joseph H. Fobes was appointed Head of Graduate Surgery, and Dr. Louis Rene Kaufman Head of Undergraduate Surgery.

Dr. Reuel Benson was appointed Helen S. Case Professor of Pediatrics.

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Yale University
School of Medicine

Dr. Harry S. N. Greene, since 1935 associate in animal pathology at the Rockefeller Institute for Medical Research, Princeton, N. J., has been appointed professor of pathology and surgery.

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University of Louisville
School of Medicine

Dr. Fred W. Rankin, Lexington, President-Elect of the American Medical Association, has been appointed clinical professor of surgery.

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University of Toronto
Faculty of Medicine

Dr. Charles H. Best, professor and head of the department of physiology has been appointed director of the Banting-Best Department of Medical Research to succeed the late Sir Frederick Banting. Dr. Best will resign as associate director of the Connaught Laboratories, where he has been in charge of the purification and production of insulin since its discovery.

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Johns Hopkins University
School of Medicine

Dr. Adolf Meyer, since 1910 professor of psychiatry and director of the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, retired at his own request at the end of the academic year. He will be succeeded by Dr. John Clare Whitehorn, professor of psychiatry, Washington University School of Medicine, St. Louis.

University of the Philippines
College of Medicine

The Philippine Medical Association at its recent annual meeting adopted a resolution commending Dr. Antonio Sison, dean of the College of Medicine, University of the Philippines, on his administration of the college. An editorial in *The Journal of the Philippine Medical Association* points out that in the four years since Dr. Sison was appointed dean the faculty has been strengthened, limitation and rigid selection of students have been enforced, research and scholarship on the part of the faculty have been encouraged, the curriculum has been simplified, methods of teaching have been modernized and conferences have been instituted for improvement in the work of students and faculty.

Dr. Gonzalo F. Austria, instructor in medicine, is spending two years in the U. S. as a Philippine Commonwealth pensionado to study methods of hospital record keeping and clinical clerkships.

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College of Medical Evangelists

Dr. Alfred Wm. Macpherson, assistant professor of anesthesiology, died, aged 39, from complications following surgery of a chronic intestinal ailment.

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University of Michigan
Medical School

A laboratory will be established at the University of Michigan under a grant of $30,000 from the National Foundation for Infantile Paralysis. The laboratory will temporarily be operated in the University Hospital but on completion of the new School of Hygiene and Public Health will be transferred there. Infantile paralysis and other virus diseases will be studied in the new laboratory, and field studies into nearby communities will be made to promote the work.

The university has established a department of heredity as a division of the laboratory of vertebrate genetics to work in close cooperation with the medical school. A heredity clinic, to be conducted by the new department, has also been established with quarters in the University Hospital. It will secure the data necessary to determine the role played by heredity in the production of or predisposition to malformations and disease. The new department and clinic are the outgrowth of studies of heredity in animals which have been conducted in the laboratory of vertebrate genetics for many years and which were expanded this year to include certain problems of human heredity by a grant from the Rackham Research Fund.

The freshman enrolment for 1941-1942 will be increased slightly. A small number of juniors have been given the opportunity to begin work during the summer in several clinical departments.

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Emory University
School of Medicine

Mr. L. F. Montgomery, Atlanta, is the donor of a research laboratory in the department of ophthalmology, to be established in Grady Hospital. While the unit will be established permanently for Grady Hospital, its facilities will be available to other physicians.

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New York University
College of Medicine

Appointments: Dr. Colin MacLeod, professor of bacteriology and director of the bacteriological laboratories; Dr. Alwyn M. Pappenheimer, Jr., assistant professor of bacteriology; Dr. Frank C. Combes, professor of dermatology and syphilology; Dr. James A. Shannon, assistant professor of medicine and director of the research services on the New York University Division of the Welfare Hospital for Chronic Diseases.

Promotions: Dr. Milton B. Rosenbluth, to associate professor of clinical medicine; Dr. Ludwig Eichna, to as-

sistant professor of medicine; Dr. Claude Heaton, Dr. David N. Barrows and Dr. Arthur M. Reich, to associate clinical professor of obstetrics and gynecology; Dr. Myron Goldblatt, Dr. Herman H. Lardaro, Dr. Mortimer Speiser and Dr. Irwin Wellen, to assistant clinical professor of obstetrics and gynecology; Dr. Raymond E. Meek, to assistant clinical professor of ophthalmology; Dr. Harold Jacobziner, to assistant clinical professor of pediatrics; Dr. Lauretta Bender, to associate professor of psychiatry; Dr. Frank J. Curran, to assistant professor of psychiatry; Dr. Benjamin Apfelberg, Dr. Morris Herman, Dr. Sylvan Keiser, Dr. Charles B. Thompson and Dr. Herman Wortis, to assistant clinical professor of psychiatry; Dr. John H. Mulholland, to professor of clinical surgery; Dr. Samuel Standard, to assistant professor of surgery; Dr. Francis A. Echlin, to assistant professor of surgery (neurosurgery); Dr. Anthony S. Bogatko, Dr. Victor Carabba, Dr. Thomas J. Galvin, Dr. Meyer J. Kutisker, Dr. John A. Lawler, Dr. Joseph Nash, Dr. Irwin Siris, Dr. Hippolyte Wertheim, Dr. Samuel Mufson, Dr. Wallace B. Murphy and Dr. Benjamin G. P. Shafiroff, to assistant professor of clinical surgery; Dr. John H. Morris, to assistant clinical professor of surgery.

Resignations: Dr. Thomas Francis, Jr., professor of bacteriology and director of the bacteriological laboratories. Dr. Francis resigned to accept the duties of professor and head of the department of epidemiology at the new School of Public Health at the University of Michigan.

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University of Wisconsin
Medical School

Dr. Harold M. Coon succeeds Dr. R. C. Buerki as superintendent of the Wisconsin General Hospital and the Wisconsin Orthopedic Hospital for Children, professor of hospital administration and executive secretary of the Medical School.

Duke University
School of Medicine

Dr. Raymond S. Crispell, associate professor of neuropsychiatry, has been ordered to active duty in the U. S. Navy, with the rank of lieutenant commander. Dr. Crispell will teach neuropsychiatry and participate in research and clinical work in psychology and psychiatry at the Naval School of Aviation Medicine at the Naval Air Training Station at Pensacola, Fla.

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Howard University
School of Medicine

Dr. John W. Lawlah, of Chicago, has been appointed dean to succeed the late Dr. Numa P. G. Adams. Dr. Lawlah is a graduate of Rush Medical College, class of 1932.

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Western Reserve University
School of Medicine

Dr. Carl J. Wiggers, professor of physiology, was awarded the honorary degree of Doctor of Science by the University of Michigan at its commencement exercises, held June 21.

Alumni and friends of Dr. Torald H. Sollmann, dean and professor of pharmacology and materia medica, presented his portrait to the school. The names of the six hundred persons responsible for the gift were written in a leather bound book presented to Dr. Sollmann at an unveiling ceremony at the Hotel Cleveland.

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Bowman Gray School of Medicine
of Wake Forest College

Dr. William Allan, Charlotte, has been appointed head of a department of eugenics. The department will be financed by a grant from the Carnegie Foundation of New York. Dr. Allan is visiting professor of medicine at the Medical College of Virginia, Richmond, and is director of a family record department at Memorial Hospital in Charlotte. Dr. James B. Whittington,

medical director of the City Hospital of Winston-Salem, has been appointed head of a department of hospital administration.

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Columbia University College of Physicians and Surgeons

An anonymous donor has given $10,000 for research in dermatology by Dr. A. Benson Cannon. The Josiah Macy, Jr., Foundation has also made a grant of $7,700, of which $2,200 is to be used for a study of the health needs of a group of families and $5,500 for a study of traumatic shock due to external injury or blow under the direction of Magnus I. Gregersen, Ph.D., professor of physiology.

The freshman enrolment for the 1941-1942 session has been increased by 15 over the usual number.

Seniors, who choose to do so, may substitute clerkships during June, July and August for the same activities ordinarily scheduled for March, April and May, 1942, and graduate in February, 1942, without loss of instruction. Fifteen seniors took advantage of this arrangement.

Appointments: Dr. John H. Garlock, clinical professor of surgery; Dr. Frederick A. Mettler, professor of gross anatomy, University of Georgia School of Medicine, Augusta, associate professor of anatomy; Howard J. Curtis, Ph.D., instructor in physiology, Johns Hopkins University School of Medicine, Baltimore, assistant professor of physiology; Dr. Maurice Lenz, professor of clinical radiology; Dr. Alexander Ashley Weech, professor of pediatrics; Dr. John M. Hanford, associate professor of clinical surgery.

Promotions: Drs. Arthur M. Master, Helen Gavin and Frederick R. Bailey, assistant clinical professors of medicine; Dr. Joseph H. Holmes, assistant professor of physiology. Dr. Ludvig von Sallman, assistant professor of ophthalmology; Dr. Louis Hirschborn, assistant professor of pharmacology.

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State University of Iowa College of Medicine

Special exercises were held May 27 to mark the presentation to the university of the portrait of Dr. Arthur Steindler, professor and head of the department of orthopedic surgery. The portrait, a gift of former students and present staff members, is the work of Sidney Dickinson of New York. Dr. Steindler has been teaching at the university since 1913.

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Residency in Allergy

The Wisconsin General Hospital, Madison, Wisconsin, offers a residency in allergy—open October 1, 1941, for one or more years, as desired. The pay is $25 a month and maintenance for the first year; $50 and maintenance for the second year; $75 a month and maintenance for the third year. The Hospital has a large inpatient and outpatient service consisting of private and so-called special rate cases on which a complete allergic study is made. This is an excellent opportunity for any one who desires to devote himself to this specialty.

General News

Revised Agreement for Operation of Research and Educational Hospitals Entered Into by the Department of Public Welfare of the State of Illinois and the University of Illinois

Purpose. The purpose of this Agreement is to promote high standards of education and research in the professions of the medical sciences, and thus to improve the general welfare of the State. The University of Illinois and the Department of Public Welfare recognize that through cooperation they can most effectively bring about the development of educational and investigative programs calculated to lessen future burdens on the State, due to physical and mental disability among its citizens.

By authority granted the Department of Public Welfare and the Board of Trustees of the University of Illinois in an act of the Fifty-seventh General Assembly of the State of Illinois, approved July 3, 1931, relating to the founding and operation of the Research and Educational Hospitals of the State of Illinois, the Department and the University have entered into the following Agreement which revises and supplants that made in April, 1932.

ARTICLE I

DEFINITIONS

Research and Educational Hospitals

Section 1. "Department" as used herein means the Department of Public Welfare; "University" means the Board of Trustees of the University of Illinois; and "Research and Educational Hospitals" comprises the University Clinical Institute and the out-patient department of the University (the General Hospital), the Institute for Juvenile Research, the Illinois Surgical Institute for Children, the Neuropsychiatric Institute, and such other hospitals and institutes hereafter created, as may be added thereto by agreement of the Department and the University.

Constituent Units

Section 2. By the phrase "constituent unit" when used herein is meant one or more than one of the following: The University Clinical Institute and the out-patient department (the General Hospital), the Institute for Juvenile Research, the Illinois Surgical Institute for Children, *the Division of Physically Handicapped Children, the Neuropsychiatric Institute,* and such other hospitals and institutes as may be added hereto by agreement of the parties.

ARTICLE II

Administrative and Executive Direction

Section 1. The University shall have the administration and executive direction of the Research and Educational Hospitals except as hereinafter qualified with reference to the Neuropsychiatric Institute and the Institute for Juvenile Research, and including the Nurses' Home and the Power Plant. By this is meant control of all business transactions in connection with the work of these hospitals, which includes the employment of all officers and employees; the purchase and issuance of supplies and equipment, assigning space in the buildings among different hospitals and divisions; the control of the admission, transfer and discharge of all resident patients except as hereinafter qualified; providing maintenance for nurses, residents, interns, and patients; and new building construction, including preparation of plans and specifications, letting of contracts, supervision of construction; Physical Plant operation and maintenance, including employment and supervision of staff and purchase of materials.

Section 2. The position of Managing Officer shall be abolished. The chief administrative and executive officer of the Research and Educational Hospitals shall be designated as Superintendent. He shall be appointed by the University. The Superintendent shall perform such duties as may be required of him by the University pursuant to this Agreement. The Department may appoint an Assistant Superintendent upon the nomination of the University who shall be responsible to the Superintendent but shall perform such duties with respect to constituent units under the direction of the Department as the latter may prescribe. The University agrees, on the request of the Department, to the appointment of the Superintendent by the latter as Superintendent of the constituent units under its direction.

Section 3. There shall be established a Joint Committee of four, two to be appointed by the Director of Public Welfare, and two by the President of the University, to which, at the request of the Superintendent of the Research and Educational Hospitals or any Dean or other University administrative officer, may be referred any matters upon which there may be doubt or difference of opinion. Matters upon which this committee cannot agree shall be referred for decision to the Director of the Department and the President of the University.

Section 4. The Joint Committee shall serve as an advisory committee to the Director of the Department of Public Welfare on medical service and medical personnel problems of the Department; it shall serve as a permanent medium for the exchange of information, suggestions and proposals between the Department and the University and shall study and report upon all questions of a medical nature which the Department of Public Welfare wishes to bring to the attention of the University for solution. It is expressly understood that the Chicago Colleges of Medicine, Dentistry, and Pharmacy of the University shall endeavor to develop educational and research programs which will help to relieve the State in the future of its great burdens due to the physical and mental disability among its citizens. Other facilities of the University which may be useful to the Chicago Colllleges in developing new programs shall be coordinated in such studies.

Section 5. On the request of the Department, the Joint Committee shall prepare and conduct examinations for medical positions in the Department of Public Welfare and shall present a list of suitably qualified persons, from which list the Department will make appointments.

ARTICLE III

Operation: Use of Constituent Units

Section 1. The University agrees to provide for the compensation of the medical and scientific staff from the University budget of the College of Medicine for the following units: The University Clinical Institute and the out-patient department (the General Hospital), and the Illinois Surgical Institute for Children.

Section 2. The University agrees to provide all equipment and supplies, laboratory apparatus, operating room equipment, libraries and drugs, for treatment of patients and for educational and research purposes, and for the maintenance and operation of the physical plant; salaries of residents, nurses, laboratory workers, anaesthetists, physiotherapists, social service workers, business office personnel; and the maintenance of bed service, including medicine, food and laundry, from the specific appropriations for the operation of the hospital.

Section 3. The Department agrees to fully equip and maintain a Neuropsychiatric Institute on the Chicago Campus of the University for teaching and research in the field of nervous, mental and behavioral disorders. This Institute shall replace the existing Psychiatric Institute and shall be composed of two divisions: A Division of Psychiatry under the direction of the Department of Psychiatry of the University; and a Division of Neurology and Neurological Surgery under the direction of the Department of Neurology and Neurological Surgery of the University.

(a) It is agreed that in the operation of the psychiatric division the University shall provide, as a minimum, a Professor of Psychiatry, who shall act as the Director of the division, and such other scientific staff as may be agreed upon by the Deparmtent and the University, together with a secretary and three residents and pay their salaries. It is agreed that in the activities of the psychiatric division of the Institute cooperation of other medical schools in Chicago, in addition to that of the University, will be sought.

(b) In the operation of the Division of Neurology and Neurological Surgery of this Institute it is agreed that appointment and compensation of the medical and scientific staff shall devolve entirely on the University.

(c) Patients for admission to the Neuropsychiatric Institute shall be selected by the University from any available source, including, with the approval of the Department, patients committed to State Hospitals under the control of the Department. The Department, on request of the Director of the psychiatric division of the Institute, shall arrange for transfer of patients in both directions between the Institute and the State Hospitals.

(d) The Department shall provide funds and reimburse the University therefrom for physical plant maintenance and operation of the building of the Neuropsychiatric Institute and for the maintenance of patients and resident and nursing personnel. The Department shall provide for all laboratory and scientific equipment and supplies, including physiotherapy apparatus, record files and other necessary apparatus.

Section 4. The University shall supply the following services for the Neuropsychiatric Institute and also the Institute for Juvenile Research for which it shall be reimbursed by the Department in accordance with procedures for accounting and billing to be mutually agreed upon:

(a) Physical Plant services for operation, maintenance and ordinary remodeling of buildings and equipment, including:

Utilities: electricity, gas, water, steam and telephones;

Building service: janitor service; elevator service, window washing, and building maintenance;

Equipment: equipment for operation and maintenance, equipment for research or patient service, installation of such equipment, repairs of equipment as requisitioned by the Department;

Building changes and remodeling as requisitioned by the Department; and

(b) Patient service, including: food service, laundry, drugs and medicines.

Section 5. The building of the Institute for Juvenile Research shall be provided by the Department. The Department shall provide funds and reimburse the University therefrom for physical plant operation and maintenance of this building. The Institute shall be operated jointly by the Department and the University. The entire personnel shall be appointed by agreement of the Department and the University. The Superintendent shall be appointed by the Department on the nomination of the University, and the Department agrees to remove him forthwith on the written request of the University.

ARTICLE IV

Control of Buildings Erected by the University and the Department Maintenance and Supplies

Section 1. The buildings erected, or hereafter erected, by the University with state appropriations made to it, or with funds available from any source for such purpose, and designated for the use of the Colleges of Medicine, Dentistry and Pharmacy of the University of Illinois, shall be controlled, maintained and operated by the University exclusively.

Section 2. Beginning with the biennium 1941-43 the appropriations for the Research and Educational Hospitals, including the University Clinical Institute, the Illinois Surgical Institute for Children, the Division of Handicapped Children, the power and heating plant and distribution system, the nurses' home, the laundry, the storerooms, and other necessary services and utilities, shall be made to the University.

The University shall prepare, in consultation with the Department of Public Welfare, a separate bill to cover the appropriations requested for the 1941-1943 biennium and shall present this bill to the legislature for enactment. The Department of Public Welfare agrees to support said bill as a joint recommendation. Thereafter the University shall be responsible for the preparation and introduction of a bill to cover the cost of operating and maintaining the Research and Education Hospitals.

The responsibility and initiative for the further development of the physical plant of the Research Hospitals shall rest with the University. The Department shall cooperate with the University in securing additions to the hospital facilities for research and educational purposes.

Section 3. The University may make general rules for the operation and maintenance of each constituent unit which, under this agreement, is not to be controlled or operated, in whole or in part, by the Department.

Section 4. All land, buildings and equipment now held by the Department of Public Welfare in Chicago in the city block bordered by Polk, Wood, Taylor, and Wolcott Streets shall be transferred to the University when the approval of the General Assembly is secured, with the following exceptions: the Department shall retain the land, buildings, and equipment of the Institute for Juvenile Research and the Neuropsychiatric Institute.

The University shall assume responsibility for the inventory of all properties and materials included in the transfer.

ARTICLE V

Maintenance of Personnel

Section 1. Maintenance shall be allowed only to officers and employees who are required to be residents of the Research and Educational Hospitals. Requirements for residence shall be determined by the *Joint Committee.*

ARTICLE VI

School of Nursing and Nursing Instruction

Section 1. Should a school of nursing be established, during a legislative recess, and the nursing service of the Research and Educational Hospitals be then provided by such a school

of nursing, it is agreed that such funds as may have been appropriated for nursing may be made available for the school of nursing so organized by the University until such time as funds are provided in the succeeding budget of the University.

ARTICLE VII

Division of Physically Handicapped Children

Section 1. The University agrees to undertake the administration of the Division of Handicapped Children, now supported by a grant from the Federal Government, through the Department of Labor and the Children's Bureau subject to the provisions of existing applicable statutes concerning the powers and duties of the Commission for Physically Handicapped Children. The University will undertake a thorough study of the organization and services of this division and shall consult with the Commission on Physically Handicapped Children, the Department of Public Welfare, the State Department of Health, the Children's Bureau and the Governor, as to the future support and development of this program.

Agreement Entered into Between the University of Illinois and the Presbyterian Hospital, Chicago

WHEREAS the Board of Trustees of the University of Illinois, hereinafter referred to as the University, and The Presbyterian Hospital of The City of Chicago, Illinois, hereinafter referred to as the Hospital, desire to bring about closer cooperation than now is possible in order to improve the standards of medical instruction and the treatment of patients;

NOW, THEREFORE, it is agreed:

1. Nothing in this agreement shall be construed to affect the independence or any function either of the University or the Hospital not expressly covered herein.

2. The University shall formulate a comprehensive coordinated program of undergraduate and graduate medical education and research which shall be designed to use jointly the facilities of the Hospital, the Colleges of Medicine, Dentistry and Pharmacy of the University, and the Research and Education Hospitals and Institutes of the University.

3. The University, upon request of the Hospital, will suggest a program of affiliation of the School of Nursing of the Hospital with or without incorporation thereof in the University educational system.

4. Appointments to the staff of the Hospital shall be made as hitherto by the Board of Managers thereof.

(a) Nominations for new appointments to the staff shall be made by the University after adequate consultation between appropriate administrative officers in the College of Medicine and in the staff of the Hospital.

(b) The University may nominate, after adequate consultation between the appropriate administrative officers of the College of Medicine and in the staff of the Hospital, a limited number of qualified members of its faculty of Medicine to the staff of the Hospital.

The Executive Committee of the staff of the Hospital shall review all nominations of the University and forward them with its recommendations to the Board of Managers of the Hospital.

(d) The University will appoint to its clinical faculty of Medicine the members of the staff of the Hospital.

5. The Dean of the College of Medicine of the University, or a representative designated by him, shall be a member of the Executive Committee of the staff of the Hospital, but without the privilege to vote.

6. It is understood, subject to court approval, that the existing Rush Medical College facilities will be made available to the Hospital and that the Trustees of Rush Medical College, with its facilities and trust funds, will cooperate with the University and the Hospital in the above mentioned program of medical education, and that the University, in order to provide continuity between the old and new organizations, will designate those members of the Rush faculty who become members of its College of Medicine as "Rush Professors."

7. In entering into and carrying out this agreement, neither party assumes any responsibility for the budgetary obligations of the other.

8. This agreement shall become effective on July 1, 1941, and may be terminated upon one year's notice given by either party to the other.

University of California

The Columbia Foundation has given $50,000 to the University of California, Berkeley, for the study of applications of the cyclotron to medicine. The gift will be known as the Columbia Fund for Medical Physics and will enable Berkeley scientists to intensify studies which have shown promise of providing new treatments for disease. The university will now be able to support for five years a research team of five men trained in as many fields, $10,000, to be allotted each year, effective immediately. Dr. John H. Lawrence, San Francisco, will be in charge of the medical investigations with the cyclotron. The Columbia Foundation was organized by a San Francisco family which prefers to remain anonymous.

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Dr. Francis P. Rous

The Royal College of Surgeons of England has awarded its Walker Prize for Cancer Research to Dr. Francis Peyton Rous of the Rockefeller Institute for Medical Research. Dr. Rous has also been elected an honorary fellow of the Royal Society of Medicine of London.

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Edwin R. Kretschmer Memorial Fund

The Institute of Medicine of Chicago announces the establishment of a foundation to be known as the Edwin R. Kretschmer Memorial Fund, given by Dr. and Mrs. Herman L. Kretschmer in memory of their son, who died last February. Income from the fund is to be used for research lectures on myelogenic leukemia and for research in the field of blood dyscrasia.

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Grants for Cancer Research

The National Advisory Cancer Council made the following grants for research:

Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York, $5,000 for study of metabolism in patients with cancer of the stomach.

University of Rochester School of Medicine and Dentistry, Rochester, N. Y., $5,000 for a coordinated study of cancer of the stomach in human beings.

New York Hospital, New York, $5,000 for research on early diagnosis.

Dr. Robert S. Stone, University of California Medical School, San Francisco, $9,750 for study of the curative value of fast neutrons on human cancer with the aid of the cyclotron.

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School of Nutrition at Cornell

A school of nutrition with courses leading to the degree of master of science in nutrition has been established by Cornell University, Ithaca. The school will offer a two year curriculum to students who have completed three years of preparatory work at the college level. In addition to training specialists the school will offer instruction to students in related fields, such as agricultural agents, conservationists, veterinarians, physiologists, toxicologists and those preparing to serve the food industries.

Leonard A. Maynard, Ph.D., professor of animal nutrition at Cornell for the past twenty years and director of a nutrition laboratory established at Cornell by the U. S. Department of Agriculture in 1939, will be director of the school of nutrition. Members of the staff will be drawn from the divisions of the university most concerned with nutrition problems, it was said. Also associated with the work will be Dr. Eugene F. Du Bois, professor of physiology, and other members of the staff at Cornell University Medical College, New York, the announcement said.

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$1,000,000 for Scientific Research

Under the will of George Herbert Jones, one of the founders of the Inland Steel Company, about $1,000,000 has been set aside to "promote scientific

research to alleviate human suffering, improvement of living and working conditions, improvement of facilities for recreation, and improvement of hygiene and prevention of disease, and to assist care of children, the sick, aged,and helpless; reformations of victims of alcohol and narcotics, ex-convicts and wayward persons, and to facilitate work in social and domestic hygiene." The will directs that the income and not more than 10 per cent of the principal are to be disbursed by the Chicago Community Trust to charities and educational institutions which "best make for the mental, moral, intellectual and physical improvement" of residents of the state. Mr. Jones during his lifetime gave about $4,000,000 to education and medicine.

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The National Foundation for Infantile Paralysis

The distribution by the National Foundation for Infantile Paralysis of new grants totaling $195,030 with which to carry on its battle to conquer infantile paralysis was announced Friday by Basil O'Connor, New York, president of the Foundation.

With several epidemics of the disease now making their appearance, the announcement is of particular significance, Mr. O'Connor said, because it assures the American people whose contributions make the Foundation possible that the fight against one of the most dreaded of modern diseases is being relentlessly carried on with all the resources that the Foundation can command in both the laboratories of the nation and in the communities where infantile paralysis has struck.

A review of some of the purposes for which the new grants have been made, he explained, will give some idea of the many fronts on which the disease must be and is being attacked.

Infantile paralysis is a virus disease and because the exact nature of viruses has not yet been determined, there is urgent need for virologists to aid both the Foundation in its general work and communities when they are stricken with an epidemic of infantile paralysis. To aid in meeting this urgent need of specially trained personnel in the battle against the disease, the Foundation has made a grant of $40,000 to the newly organized School of Public Health at the University of Michigan, Ann Arbor, Michigan. These funds will be used to continue aiding the school for the express purpose of creating facilities to study virus diseases and to train virologists, with particular emphasis on infantile paralysis.

A grant of $2,000 has been paid to the Tuskegee Institute, Tuskegee, Alabama, to provide a fellowship to a man trained in orthopedic shoe making. The amount of this grant will make it possible for him to go to Warm Springs, Georgia, occasionally for study and wherever else may be necessary in carrying out his particular kind of work of aiding those who have been stricken with the disease.

For the purpose of investigating the various forms of treating experimental infantile paralysis by the use of biologic and chemical agents which may be of value in combatting the disease in the nerve cells, a grant of $7,400 has been made to the Department of Pediatrics at the University of Michigan.

Two grants totaling $5,600 have been made to the University of Minnesota, Minneapolis, Minnesota, one for the investigation of certain aspects of the development of lesions from the disease in the spinal cord and the other to continue aid to the university in conducting a course in orthopedic public health nursing.

On the west coast a study involving precise analysis of the movements of the various joints of the body, a project of particular importance in the treatment and prevention of after-effects of the disease, will be continued by the University of California Medical School, San Francisco, under a grant of $4,250.

A grant of $1,750 to the New York Orthopaedic Dispensary and Hospital,

New York, will make possible a continuation of a study of the inequality of growth and development of the lower extremities of persons afflicted with infantile paralysis.

A continuation of work on the development of an objective method of determining the active power of muscle groups concerned with certain motions of the trunk of the body on the pelvis in cases of infantile paralysis, and a determination of the necessity for and the effectiveness of operations and conservative treatment of patients suffering from paralysis of these muscle groups will be possible under a grant of $1,700 to the Hospital for Joint Diseases, New York.

A grant of $1,000 to the Hospital of the New York Society for the Relief of the Ruptured and Crippled, New York, will permit a continuation of a study of paralytic curvature of the spine, including the problem of preliminary care and prevention, the indications for operation and when it should be performed, the mechanics involved in the condition and the care and follow-up after operation.

Two grants totaling $23,400 have been made to the National Organization for Public Health Nursing, New York, one of them to continue a previous grantto encourage nurses with desirable qualities to prepare themselves for the field of orthopedic public health nursing; to stimulate accredited colleges and institutions to establish courses in this subject; to aid in the development of centers where such trained nurses ca nbe sent to practice under supervision, and to prepare a manual on orthopedic nursing care. The other will continue aid to provide seven scholarships in orthopedic nursing care.

A grant of $8,500 to the National League of Nursing Education, New York, will provide instruction of nurses whose main interests are the care of orthopedic patients in institutions.

Two grants totaling $6,300 to the Children's Hospital, Boston, will make possible the continuation of a study aimed at determining the effects of infantile paralysis on the growth of lower extremities and the inauguration of a study of the effect of prolonged periods of bed rest and other factors in the development of calculi or stones in the urinary tract of infantile paralysis patients.

A continuation of a study of clinical cases of infantile paralysis where patients have an unequal growth of lower extremities and other aspects of this problem will be made under a grant of $2,500 to the Massachusetts General Hospital, Boston.

A study of the gastrointestinal tract as the portal of entry of the virus in paralysis will be made under a grant of $3,000 to the Boston City Hospital.

Under a grant of $9,200, the Strong Memorial Hospital, at the University of Rochester, Rochester, New York, will continue studies to determine the functional indices in normal and abnormal locomotion.

The University Hospital, the State University of Iowa, Iowa City, under a grant of $7,100 will continue an evaluation of treatment in the return of muscle function and the prevention of deformity in acute and subacute infantile paralysis, with special attention being given to the determination of the optimum period of splinting and the relative merits of treatment measures, as well as to continue a critical and analytic study of gaits in infantile paralysis with emphasis being placed on comparative studies of preoperative and postoperative cases.

A grant of $3,000 to the State University of Iowa will permit a continuation of studies of the extent and velocity of muscle and nerve regeneration in connection with the disease and other aspects of this problem.

Two grants totaling $7,930 to Michael Reese Hospital, Chicago, will permit a continuation of previous studies in various aspects of the treatment of infantile paralysis and some aspects of the after-effects of the disease.

A continuation of an investigation

of the final effects of the tendon and muscle transplantation will be possible under a grant of $720 to the Department of Surgery of the University of Chicago.

Of particular significance in the problem of finding a means of preventing the disease is a grant of $4,980 to the Department of Bacteriology and Parasitology of the University of Chicago for a continuation of studies aimed at determining whether insects or other members of this branch of the animal kingdom may be carriers or reservoirs of the infantile paralysis virus in nature.

A grant of $400 to the Children's Hospital, Baltimore, Maryland, will permit a continuation of a study of the relation of excision of the abdominal muscles to the development of curvature of the spine.

A study aimed at determining the disposition of the infantile paralysis virus neutralizing antibodies among residents of an urban community, under what circumstances and at what rate persons develop such antibodies and the correlation of these data with the occurrence of infantile paralysis in humans will be made under a grant of $9,300 to the Johns Hopkins University School of Medicine, Baltimore.

The isolation of the virus of infantile paralysis from persons without symptoms of the disease who have not had contacts with those suffering from it will be endeavored under a grant of $5,000 made to the Department of Bacteriology of the University of Southern California School of Medicine, Los Angeles.

A continuation of a study of the disease in the experimental animals after infantile paralysis has been produced by way of the gastrointestinal tract, and studies of various other aspects of the disease, particularly as applied to nervous tissue, is provided for by a grant of $5,300 to the City Hospital of Cleveland.

Two grants totaling $13,900 have been made to the Bureau of Laboratories of the Michigan Department of Health, Lansing, Michigan. These provide for a continuation of studies of the prevention and treatment action of a variety of substances on St. Louis encephalitis (sleeping sickness) and infantile paralysis infections in mice and cotton rats and also the attempt to establish other human and monkey strains of infantile paralysis virus in cotton rats and white mice.

Attempts to develop more effective methods of recovering the virus of infantile paralysis from stool specimens and thus determine the actual incidence of this virus in the stools of infantile paralysis patients and persons who have had contact with the disease as well as noncontacts will be continued by the Connaught Laboratories at the University of Toronto, Toronto, Canada, under a grant of $8,800.

The New York State Department of Health, Albany, under a grant of $12,000, will continue to study the prevalence of apparently healthy carriers of the virus of infantile paralysis in households with and without actual cases of the disease; the length of time that such persons and infantile paralysis patients continue to carry the virus; the relationship of virus carriers to the transmission of the disease, taking into account investigations of all factors which might be concerned in the spread of the disease; studies of the portions of the nervous system involved in infantile paralysis, and possible improvements in procedures for the detection of the virus of the disease in stools.

* *

Student Textbooks

Paul B. Hoeber, Medical Books Department of Harper & Brothers, announces the early publication of a new series of textbooks written especially for the use of undergraduate medical students, although they will also serve the graduate who wishes to review or brush up on any of the preclinical subjects included in the medical course. These books are to be of comparatively

small size, not a quiz or compendium, but a text presenting the essentials of the subject which it is important for the student to know and eliminating theoretical discussions and matter which he can well do without during his studies as an undergraduate. The larger textbooks will still serve as reference books and for more extensive reading and study and for him who wishes to go into the subject more deeply. Another important factor of these books will be the comparatively low cost and the small size, thus bringing them within the range of the student's ability to buy and to handle conveniently. Texts on embryology, biochemistry and bacteriology are now on the press and will be ready for distribution early in 1942.

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Examinations for Medical Positions Announced by Civil Service Commission

Junior medical officer positions at $2,000 a year will be filled at St. Elizabeth's Hospital in Washington, D. C. There are two types of interneship: Rotating and Psychiatric Resident. The rotating interneship consists of 4 months of surgery, acute medical service, and of chronic medical service; 2 months of obstetrics and of pediatrics, on affiliation; 3 months of general laboratory work, and 6 months of psychiatry. To qualify, applicants must be fourth-year students in a Class A medical school. Applicants must show completion of the course prior to June 30, 1942, before they may enter on duty. Graduates in medicine who have already served an accredited rotating interneship are offered a postgraduate interneship of 1 year of psychiatry (American Medical Association Classification 2, Type B). To qualify for this type of appointment, applicants must have completed their fourth year of study in a Class A medical school subsequent to December, 1935, and must have either a B. M. or M. D. degree. Applications will be accepted at the Commission's Washington office until November 15, 1941, and will be rated as soon as practicable after receipt.

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Mayo Foundation

A grant of $52,000 was received from the Rockefeller Foundation for a cooperative program of research in biology and medicine to be conducted with the assistance of University of Minnesota staff members. The grant is to be used in the study of radioactive isotopes as tracers of fundamental biological mechanisms. This research has been conducted since 1937, when a grant of $37,000 was made by the Rockefeller Foundation. Another grant of $17,000 from the Rockefeller Foundation for the support of research in the field of biophysics was also received.

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Postgraduate Courses in Clinical Medicine

During the coming year Mount Sinai Hospital, New York City, will present postgraduate courses in clinical medicine in cooperation with Columbia University College of Physicians and Surgeons. One series of part time courses on various topics will be offered from October 27 to December 20. Preceding these, October 6 to 10, there will be an intensive full time course on syphilis. A second series will be presented from February 2 to March 28, 1942. In addition three full time courses of four weeks each will be offered in the spring: cardiovascular diseases, April 6 to May 2; gastroenterology, April 6 to May 2, and internal medicine, May 4 to 29. Requests for information should be addressed to the Secretary for Medical Instruction, Mount Sinai Hospital, Fifth Avenue and 100th Street, New York.

Book News

Correction

In the review of Dr. Frank Kruzen's splendid book, "Physical Medicine," which appeared in the July issue of the JOURNAL, it is said—on the ninth line—"No definite and orderly system, etc." This should read: "A very definite and orderly system, etc." The reviewer regrets that this typographical error was made and extends his apologies to the author of the book.

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Essentials of Electrocardiography

By Richard Ashman, M.D., Professor of Physiology, and Edgar Hull, M.D., Professor of Medicine, Louisiana State University Medical School. Ed. 2. The Macmillan Company, New York. 1941. Price, $5.

Complete revision. Theory is presented adequately and practice is not neglected. Application of principles is stressed.

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Gould's Medical Dictionary

Edited by C. V. Brownlow. 5th Ed. The Blakiston Company, Philadelphia. 1941. Price, $7 (plain); $7.50 (thumb index).

Completely revised and brought up-to-date. A most valuable feature of this dictionary is the key to proper pronunciation by a phonetic respelling of the word and its origin. The table of prefixes and suffixes greatly increases the utility of the book. Many other excellent features have endeared this dictionary to those who are philologically minded and to whom a word is more than just a word.

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Electrocardiography

Including Atlas of Electrocardiograms. By Louis N. Katz, M.D., Assistant Professor of Physiology, University of Chicago. Lea & Febiger, Philadelphia. 1941. Price, $10.

The subject is presented simply and concisely. The text is profusely illustrated with detailed descriptions of the characteristics of each record. Only so much of the theoretical background is introduced as is necessary to give the reader an intelligent appreciation of the subject. Because of the analytical approach and the comprehensive survey, it meets the needs of a text, an atlas and a book of reference. The three sections of this work are each self- contained. The first deals with the theoretical aspects, the second offers a systematic description of the patterns of the electrocardiogram in health and disease, and the third section is a systematic presentation of the electrocardiographic diagnosis of the arrhythmias. In the second section the importance of the electrocardiogram in the diagnosis and management of coronary disease, now universally recognized, is properly emphasized and the value of chest leads is developed in some detail. In the last section some practical hints as to the bedside diagnosis and management of the arrhythmias is included.

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Exercises in Electrocardiographic Interpretation

By Louis N. Katz, M.D., Assistant Professor of Physiology, University of Chicago. Lea & Febiger, Philadelphia. 1941. Price, $5.

These exercises offer a valuable aid to the reading of electrocardiograms by utilizing the method of teaching clinical medicine by case reports. The volume presents a method of approach and analysis of an unknown electrocardiogram, illustrating these instructions with a detailed study of 90 cases. It will be useful not only to those beginning the study of electrocardiography but also to those who have already gained some experience, in that it provides suggestions for improving their own interpretations. It is only from the study of such interpretations that the physician can acquire adequate experience in electrocardiography. Description and interpretation of each case appear opposite the electrocardiogram, so that the reader can compare his own interpretation with that of the author. The addition of a brief resume of the patient's clinical status makes it possible to correlate the electrocardiogram with the clinical aspects of the case. Sequential curves are shown, when needed, on the succeeding page together with a description of any progression of changes and their significance.

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An Introduction to Medical Science

By William Boyd, M.D., Professor of Pathology and Bacteriology, University of Toronto. 2d Ed. Lea & Febiger, Philadelphia. 1941. Price, $3.50.

A general introduction to the study of disease, showing the place and purpose of anatomy, bacteriology, materia medica, and other subjects in the medical curriculum. Brief but comprehensive. Good reading for the prospective medical student.

Manual of Diseases of the Eye

By Charles H. May, M.D., with the assistance of Charles A. Perera, Associate in Ophthalmology, Columbia University, College of Physicians and Surgeons. 17th Ed. William Wood & Company, Baltimore. 1941. Price, $4.

One of the best textbooks for undergraduates; the standard for teaching.

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Fit to Fly

A Medical Handbook for Flyers. By Malcolm C. Crow, M.D., Lt. Col., and Harry G. Armstrong, M.D., Captain. Medical Corps, U. S. Army. D. Appleton-Century Company, New York. 1941. Price, $2.50.

A book for those who contemplate flying as a career and have to pass the physical examination and for those who are already qualified pilots and who must retain perfect health. Important aspects of aviation medicine are discussed fully.

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Papers of Wade Hampton Frost, M.D.

A Contribution to Epidemiological Method. Edited by Kenneth F. Maxcy, M.D. The Commonwealth Fund, New York. 1941. Price, $3.

This volume brings together the cream of Dr. Frost's writing in this field during a quarter of a century. The twenty papers, carefully selected by a committee of his close associates, deal with the investigation of epidemics, with epidemiological principles and their application, with stream pollution and water purification, with the epidemiology of influenza, the common cold, diphtheria, septic sore throat, tuberculosis. They reveal his manner of approach to various problems, and his mode of thought, the precision with which he ordered evidence, and the development of his philosophical concepts. Above all, they afford an insight into epidemiology at its best.

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Accidental Injuries

The Medico-Legal Aspects of Workman's Compensation and Public Liability. By Henry H. Kessler, M.D., Medical Director New Jersey Rehabilitation Clinic. 2nd. Ed. Lea & Febiger, Philadelphia. 1941. Price, $10.

This work is concerned mainly with the physician's responsibility in the interpretation of medicolegal problems, and is based on an experience covering more than 100,000 cases examined at the New Jersey Rehabilitation Clinic and the New Jersey Workmen's Compensation Bureau during the past twenty years. The statistical material embodies more than a million individual reports and its figures represent a country-wide average and reflect the various benefit provisions prevailing in this country. This work establishes the best principles for estimating traumatic disability, covers the physiology of both extremities and the spine, establishes the functional capacities of each member and then considers in detail the remaining parts of the body. There are chapters on the reciprocal relationship between traumatic and constitutional affections, on occupational diseases and on traumatic neuroses, including a discussion of the "malingerers" who so complicate the problem of equitable compensation. The concluding chapter fully covers the rehabilitation of physically handicapped persons.

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The Therapeutics of Internal Diseases

Vols. IV and V—George Blumer, M.D., Supervising Editor; David P. Smith Clinical Professor of Medicine, Yale University Medical School; Albert J. Sulllivan, M.D., Adjunct Clinical Professor of Medicine, George Washington University and Georgetown University Schools of Medicine. D. Appleton-Century Company, New York. 1941 Price, $10 per volume (sold only as a set of 5 volumes.)

Volume IV discusses diseases of the alimentary tract, the peritoneum, liver and gall bladder, pancreas, genito-urinary tract, the blood forming organs and the locomotor system.

Volume V considers the diseases of the nervous system, metabolism, endocrines, vitamins, allegry, sulfonamides and diseases of the skin. It also contains the general index of 135 pages.

As in preceding volumes, the diseases of the various organs and systems are discussed by men who are recognized authorities in the subjects of special interest to them. Thus, there is available in this series of five volumes the latest information on all subjects presented by specialists in each field. Therefore the series has great value for the practitioner whether general or special.

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Body Mechanics in Health and Disease

By Joel E. Goldthwait, M.D.; Lloyd T. Brown, M.D.; Loring T. Swaim, M.D., and John G. Kuhns, M.D., with a chapter on the Heart and Circulation as Related to Body Mechanics, by William J. Kerr, M. D. Ed. 3. J. B. Lippincott Company, Philadelphia. 1941. Price, $5.

Completely revised. A chapter on developmental deformities has been added. The illustrations have been changed to make their meaning clearer. The exercises have been rewritten with a fuller discussion of the place of special exercises for the feet in relation to the proper function of the body as a whole.

Textbook of Bacteriology

By Edwin O. Jordan, Ph.D. Late Andrew McLeish, Distinguished Service Professor of Bacteriology, University of Chicago, and William Burrows, Ph. D., Assistant Professor of Bacteriology, University of Chicago. Ed. 10. W. B. Saunders Company, Philadelphia. 1941. Price, $6.

This edition is, with minor exceptions, completely rewritten and is constructed on a somewhat different basis than its predecessors. The most obvious manifestation of this change is the elimination of the chapters devoted to the highly specialized fields, such as soil, industrial and dairy bacteriology and the incorporation of parts of these, together with other old and much new material, in a lengthy chapter on bacterial physiology. Included in this chapter, under the general head of respiration, are the oxidations brought about by the nitrifying bacteria and ther autotrophes, together with the mechanism of sugar oxidation, amino acid metabolism and the like. The relation of bacteria to disease is considered in its broad sense. The mechanisms operative in the transmission of infection have been made the subject of a separate chapter in which the fundamental principles of epidemiology are developed through the consideration of the interaction of host and parasite populations. Water and milk are also considered in terms of the transmission of disease. Included with milk is a section on food poisoning. The subject on immunity has been completely reorganized. Chapters devoted to the various bacteria are rewritten entirely and include much new material. Treatment of the filterable viruses has been expanded.

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Care of the Aged (Geriatrics)

By Malford W. Thewlis, M.D., Attending Specialist, General Medicine, U. S. Public Health Service Hospitals, New York City. Ed. 3. The C. V. Mosby Company, St. Louis. 1941. Price, $6.

A complete discussion of the care of the aged. Geriatrics is becoming of increasing importance since a larger number of persons over 60 years of age are alive today than in the past century.

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Operative Surgery

Including Anesthesia, Pre- and Postoperative Treatment; Principles of Surgical Technic, Blood Transfusion and Abdominal Surgery. Edited by Frederic W. Bancroft, M.D., Associate Professor of Clinical Surgery, Columbia University. D. Appleton-Century Company, New York. 1941. Price, $10.

The subject matter is entirely of surgical treatment and is not concerned with etiology, diagnosis or pathology. The plan is to give immediate operative procedures. There is also a discussion of the therapeutic value of radiotherapy, vaccines and drug therapy; indications for operation; counterindications; dangers and complications; prognosis of any procedure. The section on anesthesia is a general presentation of all types of anesthesia. The section on blood transfusion is very timely. It covers technic and the newer work on blood bank and plasma transfusions. The section on surgical technic is outstanding. Thirty-four authors, each one an acknowledged master in his field, have contributed their best to make this book the best of its kind.

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Pathology of the Oral Cavity

By Lester R. Cahn, D. D. S., Associate Professor of Dentistry, Columbia University. A William Wood Book. The Williams & Wilkins Company, Baltimore. 1941. Price, $5.50.

This book deals with all lesions of the mouth seen in everyday practice. Coordination in text and illustrations of the pathology of these lesions with their clinical history and appearance makes this a good reference book for diagnosis.

Electrocardiography

By LOUIS N. KATZ, M.D.

Director of Cardiovascular Research, Michael Reese Hospital; Assistant Professor of Physiology, University of Chicago, Chicago, Illinois

Imperial octavo, 580 pages, illustrated with 402 engravings including 806 electrocardiograms. Fabricoid, $10.00, net.

This work meets the needs of a text, an atlas and a book of reference. The subject is presented simply and concisely. It is profusely illustrated and has detailed descriptions of the characteristics of each record. It will be an invaluable guide to daily practice.

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